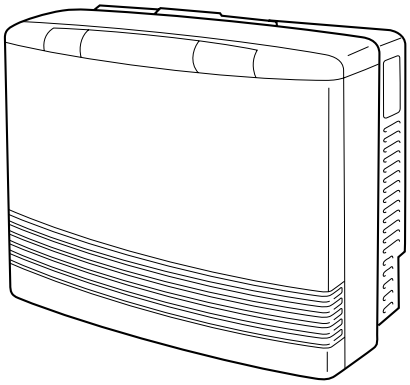
How to use your Space Heater

Rinnai



Energysaver RHFE-556FTR

Customer
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Installer
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Remote Control Included

DUAL TIMER
Set and forget

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RINNAI WARRANTY OF QUALITY

As the purchaser of this high quality model RHFE-556FTR product you are provided with the following warranty:

	Free Parts
Heat Exchanger	15 Years*
Fan	1 Year
All other parts	1 Year

* Full Heat Exchanger replacement (parts only) for all 15 years.

This warranty does not cover cleaning and normal wear and tear, calls of this nature may be chargeable. Please check the fault finding charts on page 32, before asking for a service call. You may be able to overcome the problem without the service call, or the heater may be operating normally. Service calls to a heater which is operating normally may be chargeable, even when the heater is under warranty.

The installer is responsible for your heater's correct installation. There is no requirement to post the following information back to **Rinnai UK Ltd.**
However we advise that you keep it in a safe place.

Date of installation:
Installer's name:
Address:
Telephone:
Licence number:

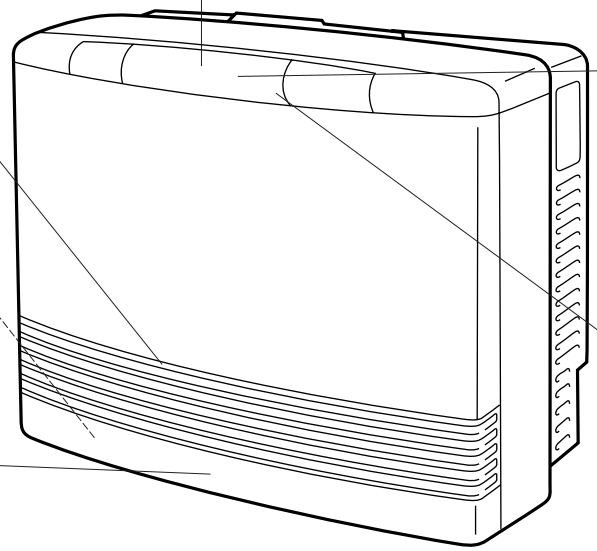
CONDITIONS

1. It is a condition of this warranty that the heater shall have been serviced annually during its lifetime by a suitably qualified service engineer and that it shall have been fitted and used in accordance with the Company's Installation and Operating instructions.

2. Failing to use genuine Rinnai spare parts may invalidate the warranty.

3. The serial number of the heater must be supplied prior to any claim being made.

GETTING TO KNOW YOUR NEW RHFE-556FTR



REMOTE CONTROL BRACKET

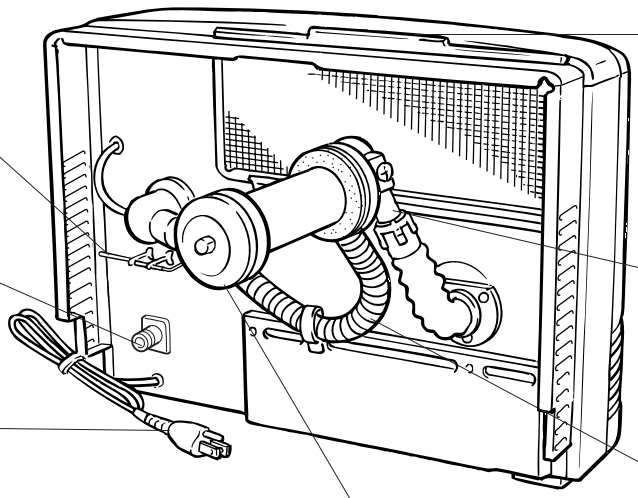
LOUVRE
Warm air discharge duct.

HUMIDIFIER TRAY
Built into the warm air discharge duct. Humidifies the warm air flow.

BOTTOM TRIM
Pulls off to allow filling of humidifier tray.

CONTROL PANEL
Concealed panel with clock, room and pre-set temperature selection.
Time, temperature and appliance error codes are shown here.

ON/OFF SWITCH



AIR FILTER
Helps to protect the interior of the appliance and fan from dust particles.

ROOM TEMPERATURE SENSOR

GAS CONNECTION

ELECTRICAL CORD

EXHAUST OUTLET
Exhausts flue products to the outside of the building.

AIR INLET TUBE
Carries air for combustion.

FLUE SYSTEM

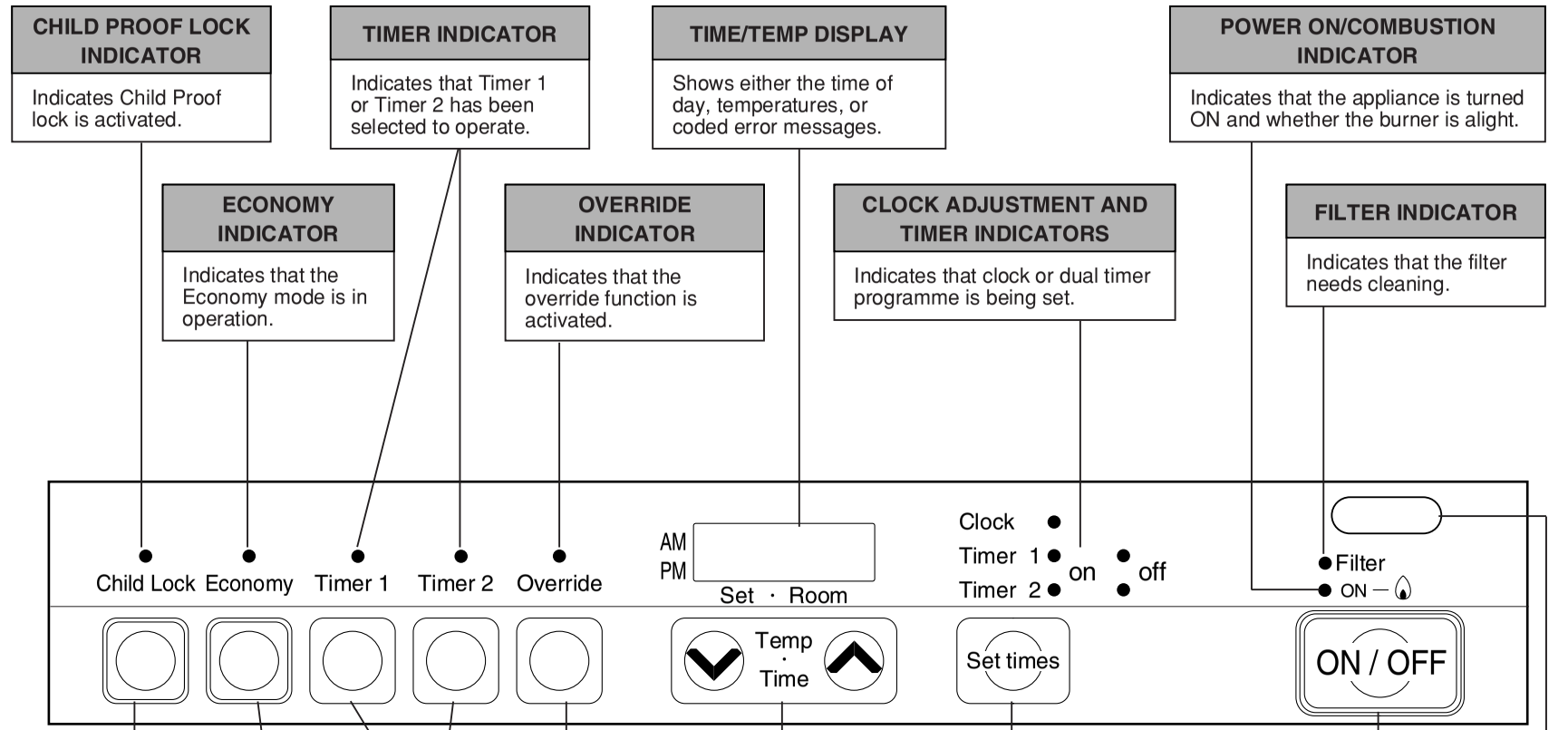
Rinnai Corporation - Japan

Manufactured under a Quality System Certified as complying with ISO 9001 by an Accredited Certification Body.

ISO 9001
APPROVED BY JIA

CE

CONTROL PANEL LAYOUT



CHILD PROOF LOCK INDICATOR

Indicates Child Proof lock is activated.

TIMER INDICATOR

Indicates that Timer 1 or Timer 2 has been selected to operate.

TIME/TEMP DISPLAY

Shows either the time of day, temperatures, or coded error messages.

POWER ON/COMBUSTION INDICATOR

Indicates that the appliance is turned ON and whether the burner is alight.

ECONOMY INDICATOR

Indicates that the Economy mode is in operation.

OVERRIDE INDICATOR

Indicates that the override function is activated.

CLOCK ADJUSTMENT AND TIMER INDICATORS

Indicates that clock or dual timer programme is being set.

FILTER INDICATOR

Indicates that the filter needs cleaning.

CHILD PROOF LOCK

Locks all controls when pressed. (EXCEPT OFF)

ON TIMER

Selects operating mode for Timer 1 or 2.

TIME/TEMP ADJUSTMENT

Increases or decreases the temperature setting as well as changing hours or minutes.

ON/OFF BUTTON

Main switch for turning ON/OFF.

ECONOMY

Selects energy saving function.

OVERRIDE

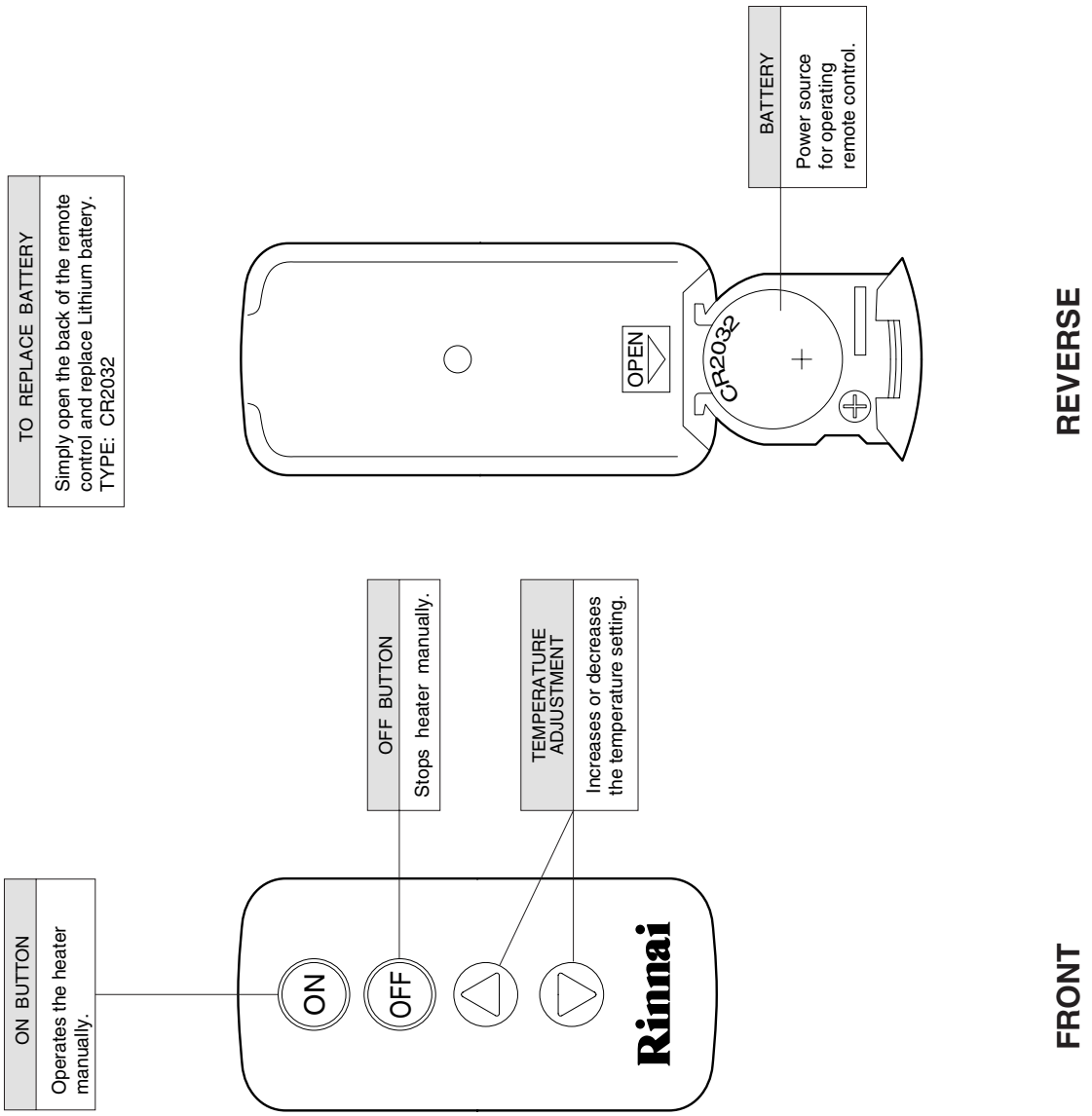
Temporarily changes operation from ON to OFF or OFF to ON, until next programmed setting is reached.

SET TIMES

Selects clock and/or Timers for adjusting or programming.

REMOTE CONTROL RECEIVER

REMOTE CONTROL



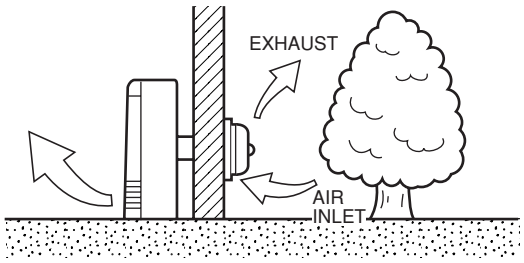
■ NOTE

- Some fluorescent lights may interfere with the transmission of remote control signals, in this case changing the position from which you are operating the remote control may help.
- Avoid leaving the remote control in direct sunlight and do not place the remote close to the louvres of the heater.
- Avoid getting the remote control wet, or dropping it.
- The remote control works within 5 metres and an angle of 20° to the receiver on the heater.
- Only use the battery type specified. (CR2032).
- Remove battery if control is not going to be used for a long period. This will help to avoid damage from leaking batteries.

FEATURES

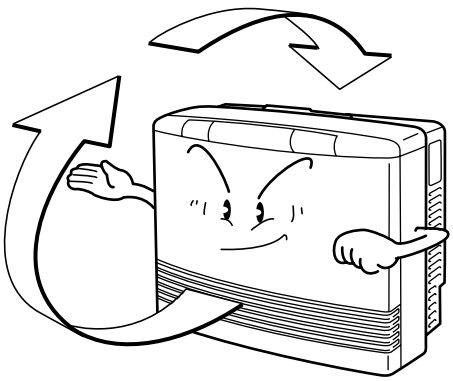
FORCED FLUE SYSTEM

Air for combustion is taken from outside the room and the flue products are exhausted outside, keeping the room air clean.



WARM AIR DISCHARGE

Warm air flows from the bottom of the appliance through the louvres, assisting in even heat distribution. An integral humidifier tray is built into the warm air discharge duct.



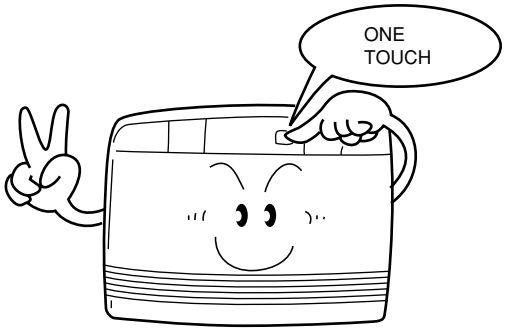
PRE-HEAT

The function will automatically operate the appliance within one hour prior to the programmed start time of the timer. This is designed to heat a room to the pre-set temperature by the programmed time.

(See page 16)

PUSH BUTTON IGNITION

Only one touch of the ON/OFF switch is required to operate the heater.



(See page 9)

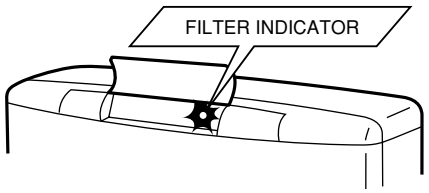
DUAL ON/OFF TIMER

The Dual Timer allows you to programme the appliance to come on for two separate periods each day, usually one period in the morning, and one period in the evening. The built in Intelligent Mode brings the room temperature to the temperature you have selected, by the time programmed into the Timer.

The Dual Timer feature means that you can “Set and Forget” your heater. It will turn itself ON and OFF at times you have programmed until you cancel the Timer program.

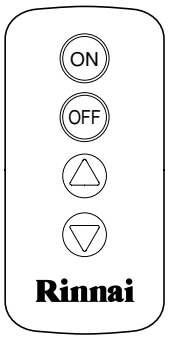
FILTER INDICATOR

When the fan filter becomes covered with dust and the temperature inside the appliance rises, the filter indicator will flash. The filter should be vacuumed at regular intervals to avoid unnecessary strain on the appliance.



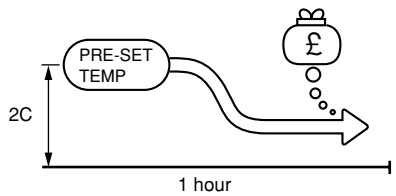
REMOTE CONTROL

For the convenience of turning the heater ON or OFF, as well as adjusting the temperature up or down while at a short distance from the heater.



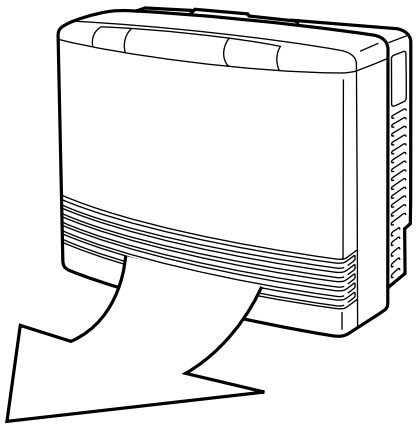
ECONOMY MODE

This is an energy saving feature designed to reduce the room temperature to 1˚C less than the pre-set temperature over a period of 30 minutes, and an additional 1˚C after another 30 minutes.



AUTO COMFORT

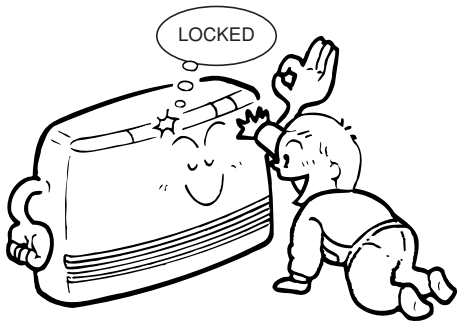
Ensures that the flow of warm air from the louvres is maintained at a comfortable volume during the warm-up period by a 8 step modulating convection fan, in conjunction with the thermostat, reducing cool draughts.



(See page 11)

CHILD PROOF LOCK

When the Child Proof lock is activated all controls other then the OFF switch will be locked. De-activating the lock releases the controls. If the lock is activated when the appliance is off, all functions will be locked.



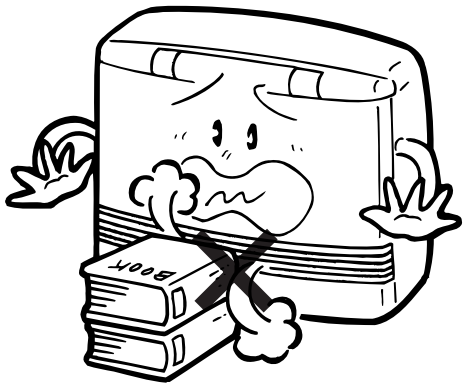
(See page 11)

MEMORY

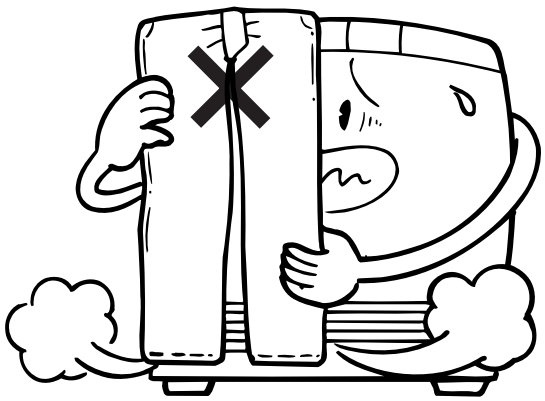
The micro-computer records selected pre-set temperatures, the times programmed into Timers as well as operating the Economy and Intelligent modes, to maintain comfort levels.

SAFETY POINTS

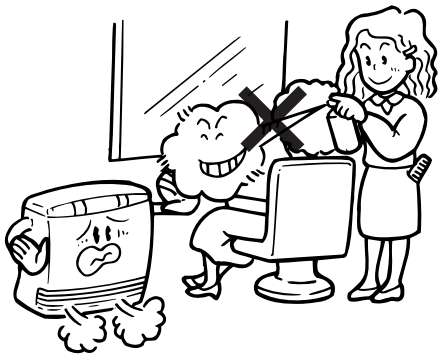
Do not restrict the warm air discharge by placing articles in front of the heater.



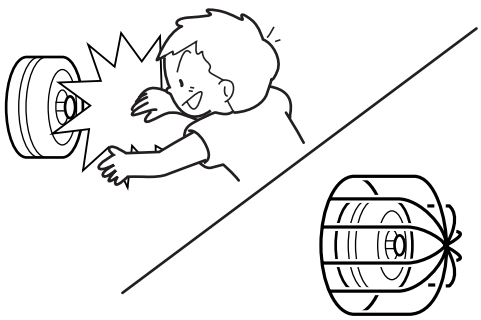
This appliance must not be used for any purpose other than heating.



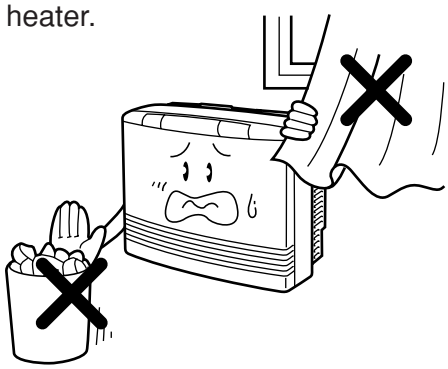
Do not spray aerosols whilst the heater is operating. Most aerosols contain butane gas, and can be a fire hazard if used near this heater when it is in use.



Flue guard must be fitted if indicated on page 26.



Do not allow curtains or other flammable or combustible materials to come into contact with the heater.

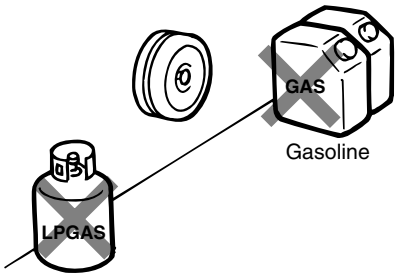


Combustible materials must not be placed where the heater could ignite them.

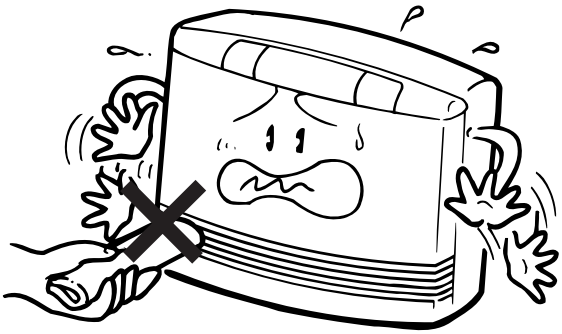
Do not allow anyone to sit on or lean against the appliance.

SAFETY POINTS

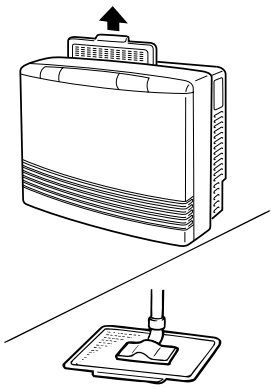
Keep flammable materials, trees, shrubs, etc, away from the flue terminal.



Do not allow anyone to post articles through the louvres.

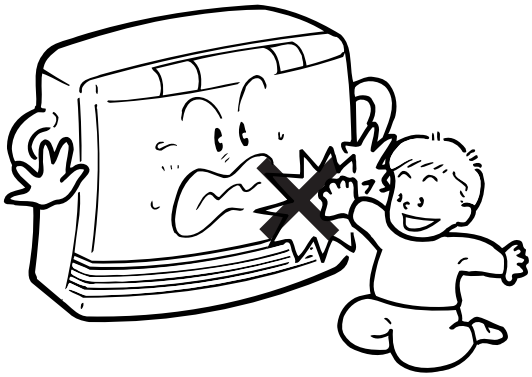


Filter should be cleaned at regular intervals. See page 12.

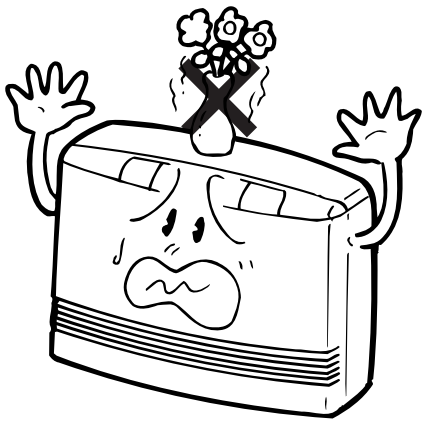


Clean with vacuum cleaner, weekly.

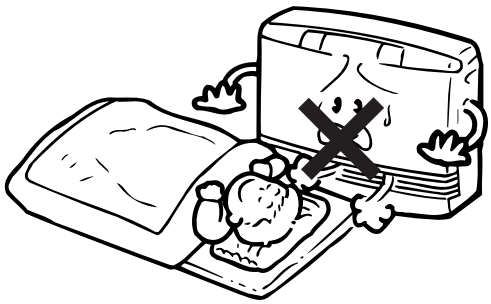
It is strongly recommended that a guard is fitted around the heater in rooms where there are young children, elderly, infirm or handicapped persons.



Do not place articles containing liquids on top of the heater. Liquids spilt on the controls may cause extensive damage.



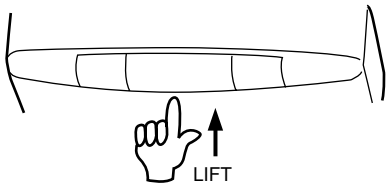
Do not allow young children or the infirm to sleep directly in front of the heater.



OPERATING YOUR NEW RHFE-556FTR

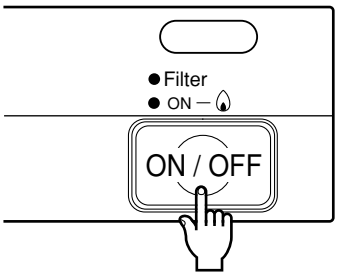
■ TO OPEN THE CONTROL PANEL

Lift lightly in the centre of the lid where there is a catch. The control panel lid will then drop backward to an angle.



■ TURNING ON

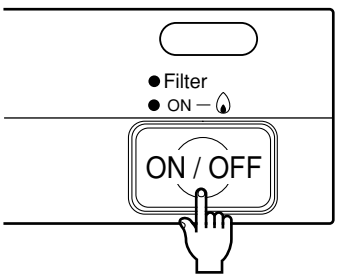
Press the ON/OFF button to operate the heater. The ON indicator will glow green. After approximately 20 seconds the spark generator will be heard before the burner ignites and the ON indicator glows red, indicating that the burner is alight. Warm air can be felt coming from the louvres 15 seconds later.



If the heater does not ignite on initial use, this may be due to air remaining in the gas supply line. The spark generator will only continue for 15 seconds. After this it will be necessary to press the ON/OFF button OFF, then ON again.

■ TURNING OFF

Simply press the ON/OFF button to switch off the heater. The ON indicator will go out. The convection fan will continue to operate for several minutes after the burner has gone out in order to cool the appliance. **Do not unplug the appliance while the convection fan is running.**



DO NOT turn heater off by unplugging at the power point.
The convection fan must continue to run until the appliance cools.

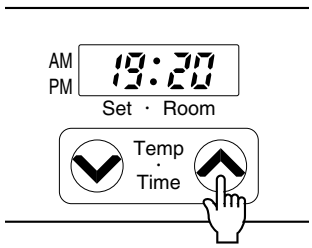
■ ROOM TEMPERATURE ADJUSTMENT

The room temperature and pre-set temperatures can only be displayed and adjusted when the heater is running.

1

Press the "^" button to increase the temperature setting or "v" button to decrease the temperature setting.
The Temperatures can be preset to:

a) [L] low (about 10˚C)
b) [16˚C] to [26˚C] in 1˚C steps
c) [H] (continuously high)



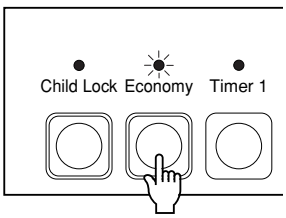
If the heater does not ignite then the pre-set temperature may not be set to a setting which is higher than the room temperature. The ON indicator will change colour from red to green when the heater reaches the pre-set temperature and stops runnning.

■ ECONOMY MODE

The Economy mode may only be operated when the heater is turned on, but remains in the system memory once set until deactivated.
Select the Economy mode before selecting time operation.

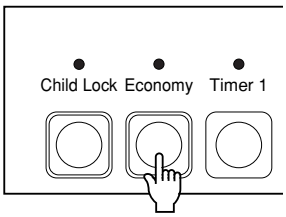
1

Press the Economy button to start the Economy function. The Economy indicator will glow.

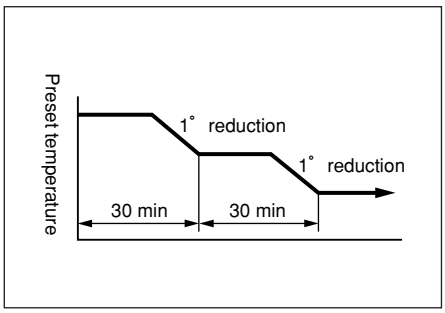


2

Press the Economy button once more to switch off the function.



After the room is heated initially the air temperature may be dropped to a lower level without affecting comfort. 30 mins after the selected room temperature (set with the thermostat) is reached, the Economy mode, if set, reduces the temperature by 1˚C. After another 30 mins it reduces the temperature by a further 1˚C, this is an energy saving feature. The Economy mode does not operate if the heater is under capacity for the room size.

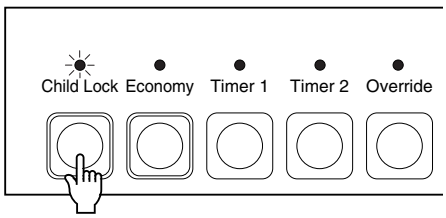


■ CHILD PROOF LOCK

The Child Proof lock will help to prevent accidental operation as well as small children from altering the controls.

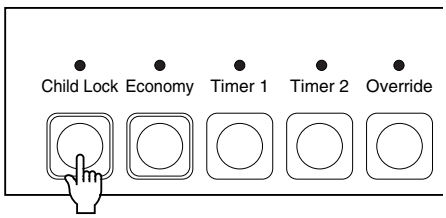
1

To operate the Child Proof lock simply press the Child Lock button. The function is activated immediately and the Child Proof lock indicator will glow.



2

To deactivate the Child Proof lock simply press the Child Lock button for 1 second and the Child Proof lock indicator will go out. The lock can be deactivated at any time in this way.



During normal operation the Child Proof lock may be activated and all controls other than the OFF switch will be locked. Deactivating the lock releases the controls. If the lock is activated whilst the heater is turned OFF, then all functions will be locked. If the heater is turned OFF whilst the Child Proof lock is activated, it cannot be turned ON again until the lock is deactivated.

■ AUTO COMFORT

A room temperature sensor located at the rear of the appliance is continuously monitoring the temperature of the room. The main purpose of Auto Comfort is to improve control over the flow of warm air being discharged through the louvres when the heater is first operated. The means by which this control is achieved is an 8 speed modulating convection fan and the temperature sensor, in conjunction with a micro-computer.

In order to achieve comfortable heating, it is preferable to avoid cold draughts from the appliance. In the case of a conventional fan heater, the convection fan operates normally from the time of ignition and a cool draught may accompany the flow of air from the appliance.

To overcome this situation, fuzzy logic controls the speed of the convection fan after taking into consideration the room temperature at the time of ignition. For example: the room temperature is low, then the fan rotates at low speed. As the room temperature rises the speed of the convection fan gradually increases.

In this way it is possible to ensure a comfortable flow of warmed air, as well as decreasing the sensation of cold draughts immediately after ignition.

The convection fan speed increases proportionally as the room gradually heats up. This improves the warm air distribution, assisting in a reduction of warm air stratification throughout the room, and resulting in more effective heating conditions.

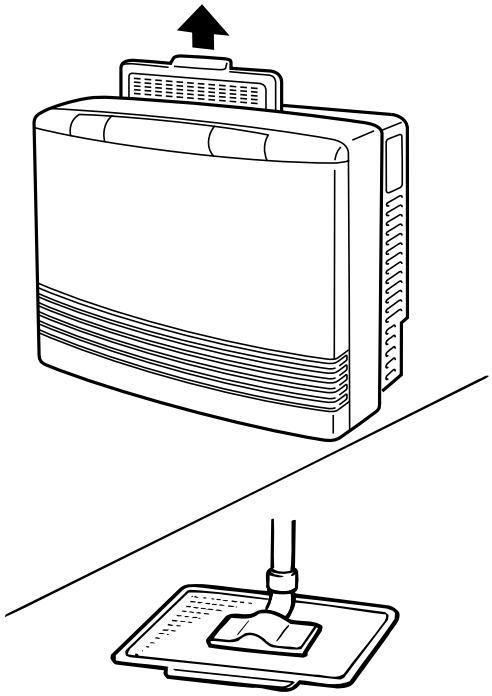
The micro computer continuously monitors the room temperature and adjusts the covection fan speed according to the conditions at the time.

■ FAN FILTER

To protect the room air fan from dust particles or lint, a filter is situated at the rear of the appliance. When this filter becomes blocked, the filter indicator will flash to indicate that it should be cleaned. Clean the filter weekly during the heating season to avoid unnecessary strain on the appliance.

Do not remove filter when appliance is operating. When the filter requires cleaning, clean filter before using the appliance, or whilst the appliance is not operating.

If you do not clean the filter at regular intervals and the filter indicator is allowed to remain flashing, then the appliance will stop and [14] will flash on the Digital Display signifying that the inbuilt safety device has functioned. You must clean the filter before operating the heater again.

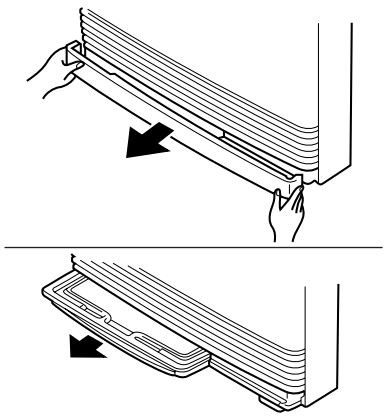


■ HUMIDIFIER TRAY

So that you can humidify the air, your Rinnai RHFE-556FTR is fitted with an enamelled tray at the bottom of the heater. If you choose to make use of the humidifier tray, it will need filling about once a day during the heating season. **Do not fill the humidifier tray while the heater is running.**

1 To fill the humidifier tray:

Remove the bottom trim panel, below the louvres, by pulling on both sides. Simply pull the tray forward to allow it to be filled with water. The warm air will be humidified as it passes over the water in the tray. Refit the bottom trim panel after filling the tray. The RHFE-556FTR is a very high efficiency appliance, during operation a small amount of condensation is produced in the flue system, this drains into the enamelled humidifier tray.

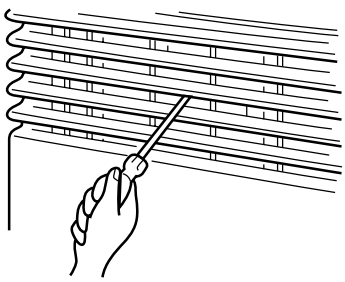


The humidifier has the benefit (when filled with water) of raising the humidity in the air. With increased humidity, the heater can actually be run at a lower temperature while still maintaining the same level of comfort.

■ VERTICAL LOUVRE ADJUSTMENT

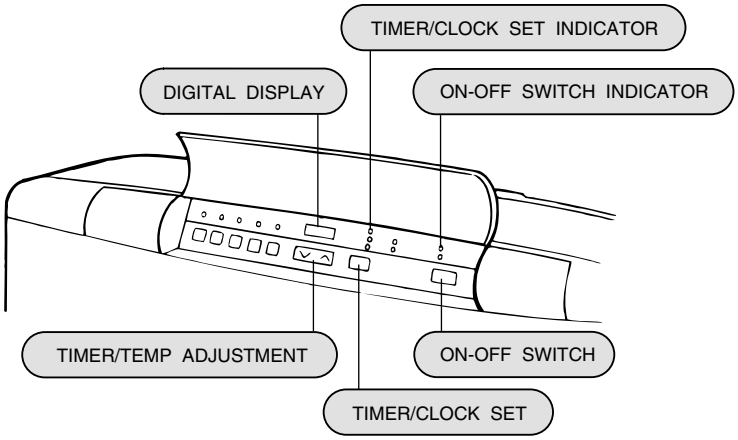
The warm air flow direction may be altered by inserting a screwdriver or similar tool and gently bending the vertical louvre(s) either to the left or the right.

Note: these louvres are not designed to be adjusted more than 6 times.



SETTING THE CLOCK

This Heater has an Integral Time Clock but can also be installed as part of a centrally controlled Time Clock System.
To set-up the Integral Clock to operate the heater, proceed as follows (Ensuring that the Central Clock, if applicable, is ON):-

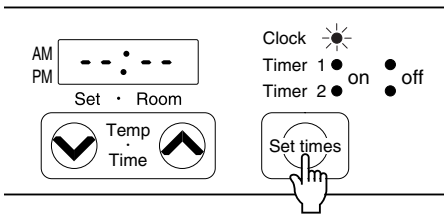


OPEN THE CONTROL PANEL – SEE PAGE 9.

1 As an example, let's set the clock to 10:35 am.

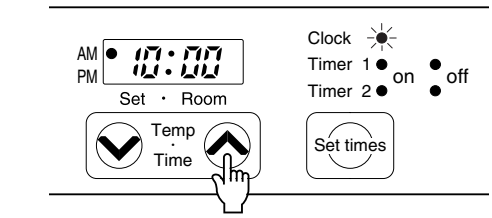
When the appliance is first plugged in or after a power failure, the Digital Display will show --:--.

Press the Set times button once, the Clock Indicator will flash.

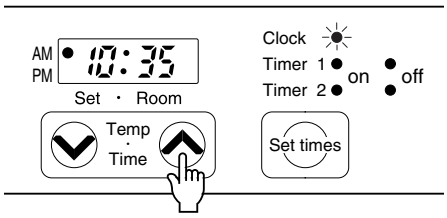


2

Press and hold the "^" button; the minutes will begin to change first, then the time will change by whole hours. Release the button when AM 10:00 shows on the Digital Display. Confirm that you have selected AM, a small indicator on the left hand side of the Digital Display indicates the AM setting.

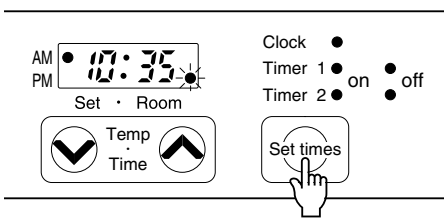


Press and hold the "^" button again, release the button when AM 10:35 shows. If you go past AM 10:35, then the "v" button can be used to change the time settings in reverse.



3

Press the Timer Set button five times to lock in and complete setting the time. The Clock and Timer indicators will go out. A small indicator on the Digital Display will flash to show that the clock is operating.



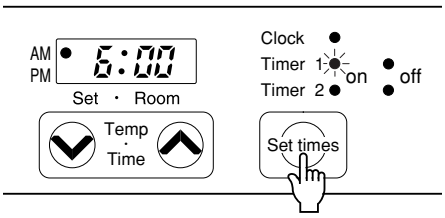
PROGRAMMING THE TIMER(S)

Before programming the Timers you must ensure that the clock has been set to the correct time.
See page 13.

As an example let's programme Timer 1 to heat the room by 7:10 AM and finish at 9:00 AM.

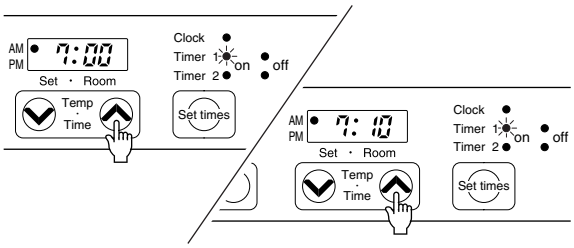
1

Press the Set Times button twice. The Digital Display will show AM 6:00. Timer 1 indicator will flash.



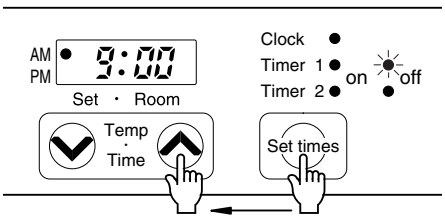
2

Press the "^" button until AM 7:00 appears, release the button, then press it again until AM 7:10 appears, (Press the "v" button if you go past AM 7:10.)



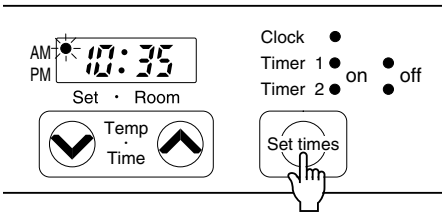
3

Press the set Times button again, the Timer 1 OFF indicator will flash. Press the "^" button until AM 9:00 appears.



4

Press the Set Times button three times to lock in the programmed time. The Digital Display will show the current time. A small indicator on the Digital Display will flash to show that the Display has returned to the clock.



TURN TO NEXT PAGE TO OPERATE THE TIMERS.

TIMER 2 is programmed in the same way, remember to ensure that the Timer 2 indicator is flashing when you programme in the desired setting.
The Timers can be programmed to operate for any two periods in any 24 hours. Turn to next page to operate the dual timer.
The programmed time must be selected and locked-in within one minute of the On Timer indicators flashing otherwise the programmed times will not be retained in the system memory.

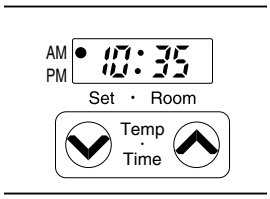
OPERATING THE TIMER(S)

Before operating the Timer(s), the clock time must be correct, and a starting time and finishing time for the Timer(s) must be programmed. See pages 13 and 14. The two Timers operate in the same way. This heater does not commence operation at the programmed starting time. It will attempt to heat a room by the programmed starting time. See Pre-heat page 16, for further explanation.

1

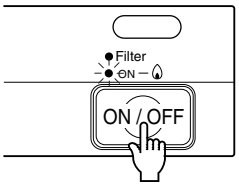
To select the Timer(s) to commence heating:

Check the time shown on the Digital Display is correct. See page 13. Check the ON and OFF times, for both Timers if neccessary, see page 14.



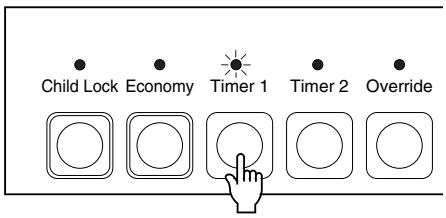
2

Press the ON-OFF button to operate the heater. The ON indicator will glow green and the heater will begin to operate. Select the desired temperature setting.



3

Press the Timer 1 and/or Timer 2 button(s).
The Timer indicator(s) will glow and the heater will remain on standby until one hour prior to the time programmed into the selected Timer(s) is reached. When this time is reached, the Timer indicator will flash and the heater will operate. The ON indicator glows red when the heater commences operation.



SET AND FORGET OPERATION

Your heater can be operated to alternate between Timers automatically during cold weather by selecting Timer 1 and Timer 2 together. Both Timer indicators will glow. The appliance will remain on standby at intervals between the programmed finishing and starting times of each Timer. While the heater is operating during programmed intervals the Timer indicator will flash.

If there is a power failure, the system memory will retain the Timer programs, and the clock will stop at the time the power goes off. The clock will start again when the power comes back on, but the time will be slow by the duration of the power failure. To set the clock to the correct time after the power has come back on, simply follow the instructions on page 13.

PRE-HEAT

1

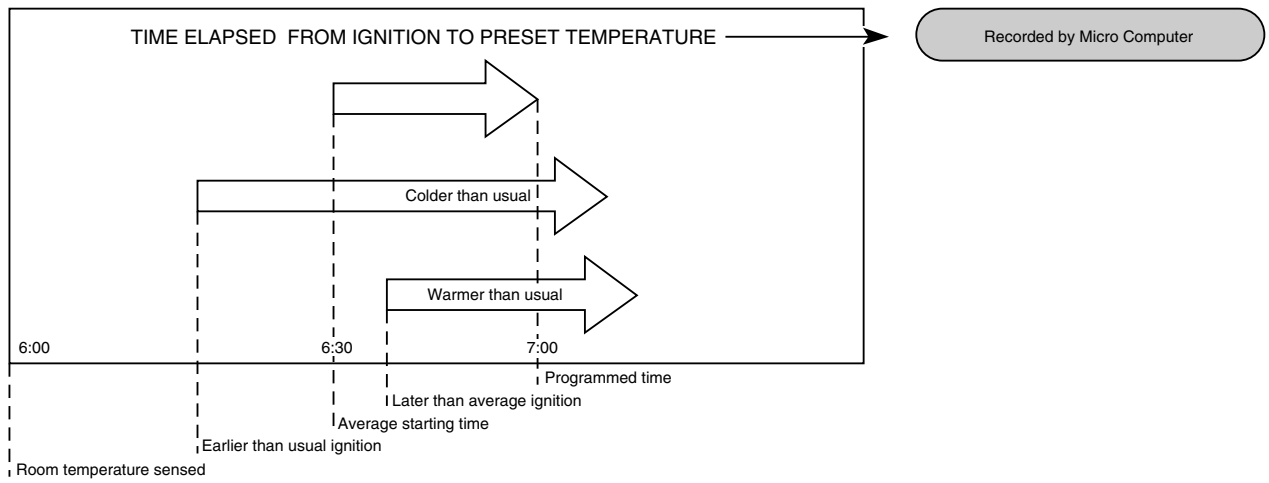
This function operates automatically in conjunction with either of the Timers. When a Timer is selected, the heater may operate anywhere within an hour prior to the programmed starting time of the Timer.

The Pre-heat function will heat a room to the pre-set temperature by the programmed On Time.

This function is called Pre-heat due to the way it operates. The room temperature is sensed one hour before reaching the programmed time of either Timer.

The temperature differential at the time of sensing the room temperature, combined with the data from the previous operation governs exactly how long before the programmed On time the micro-computer will operate the heater and ignite the burner.

The following chart may help to improve understanding of the Pre-heat function.

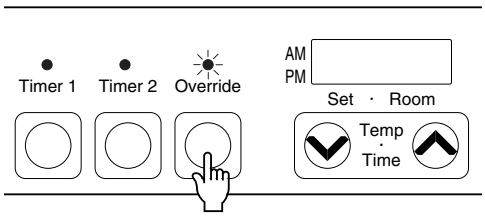


OVERRIDE FUNCTION

This function is intended to be used to manually override the current operation of the heater, For example; If the heater is in standby mode (i.e. between finishing time and starting time of a Timer). and the Override button is selected, then the heater will begin to operate, and heat the room.

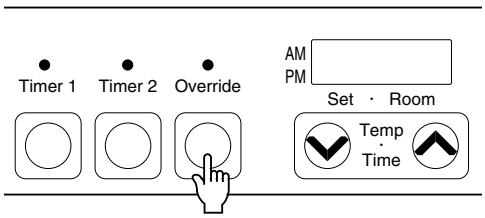
1

To operate the Override simply press the Override button. The Override indicator will flash.



2

To manually deactivate the Override simply press the Override button again. The Override indicator will go out, and the heater will return to standby mode.



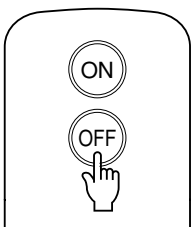
The heater will continue to operate on Override until the Override button is pressed again, or one of the Timers takes over the operation of the appliance. This means that the Override mode will automatically drop out if a programmed Starting time is reached. The appliance will then return to operating at times programmed into the Timer(s).

USING THE REMOTE CONTROL

To Turn ON or OFF

Remote Control will not turn heater ON if Timer(s) have been selected.

To manually operate when Timer(s) are not selected, simply press the ON or OFF button.



To Change Temperature

To alter the temperature at any time while the heater is operating, simply press the "▲" or "▼" buttons.

If the Timer(s) have been selected, and the heater is in standby mode, and the OFF button on the Remote Control is pressed, the Timer(s) will be deactivated.

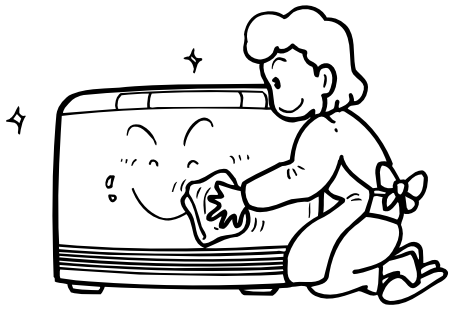
CARING FOR YOUR NEW RHFE-556FTR

This appliance is controlled by a micro computer. If there is something wrong with the appliance then it will stop, as it is protected by the following safety devices.

Ignition Safety Device	Power Failure Safety Device
Burner Safety Device	Power Surge Safety Device
Overheat Safety Device	Fan Delay Safety Device

Your RHFE-556FTR requires very little maintenance, simply clean the rear fan filter once a week and wipe the outer case and louvre section with a damp cloth.

DO NOT USE SOLVENTS.
Solvents may melt or distort plastic parts.



Problem / Cause	No ON indicator	Burner doesn't ignite	Unusual combustion	Combustion stops during operation	Smell of gas	Noisy ignition	Takes too long to warm the room	Remote control doesn't work	Remedy
Not Plugged In	●	●							Plug In
Power Cut	●	●		●					Re-ignite manually after power is restored
(Initial Installation) Air in gas pipe		●							Purge air (Installer)
Gas Filter Blocked		●	●				●		Service Call
Missed Ignition	●	●							Service Call
Flue terminal obstructed			●	●		●			Clear obstruction
Flue manifold not connected						●			Service Call
Louvre obstructed				●			●		Clear obstruction
Air filter blocked				●			●		Clean filter (weekly)
Gas Escape					●				Service Call
On Timer is set		●							Cancel On Timer
Child Proof Lock set		●							Cancel Child Proof lock
Gas turned off at meter	●	●							Turn gas on
Battery flat (remote control)								●	Replace battery

PRE-SERVICE CHECK

Before asking for a service call please check the following points.
These points are part of the normal operation of the unit.

■ At Ignition:

Heater does not operate.	➡	Is the heater plugged in? Have the fuses or breaker blown at the switch board? Is there a power failure? Is the air filter blocked? Is anything blocking the outlet for the hot air? Is the flue blocked? Are Timers set? Clear Timers and operate again.
Warm air does not flow when the burner lights.	➡	The fan is started automatically after a short delay. This is to allow the heat exchanger to warm up, helping to avoid cold draughts.
Smoke or strange smells are produced on the first trial light up after installation.	➡	This is caused by grease or oil and dust on the heat exchanger and will stop after a short time.
Sharp clicking noises at ignition, or when the unit cuts down on the thermostat, or goes out.	➡	This is simply expansion noise from the heat exchanger.

■ During combustion:

Clucking noise when the thermostat operates.	➡	This is the sound of the solenoid gas valves opening and closing.
Unit is not heating room.	➡	Is the air filter blocked? Is the set temperature high enough? Is the warm air outlet blocked by anything? Are the doors and windows of the room closed?
Air filter is blocked or the louvres are blocked or obstructed.	➡	Allow heater to cool, clean air filter, operate again.
Heater will not re-ignite after overheating.	➡	Even after unit has cooled down the heater does not ignite again. Repair is necessary. Contact **Rinnai UK** for a service call.

■ When the unit is turned off:

Convection fan continues to run after turning OFF.	➡	This is to remove the residual heat from the heat exchanger, the fan will stop when the heater cools down.

■ Other Points:

Steam is discharged from the flue terminal.	➡	High efficiency appliances tend to discharge water vapour on cold days, this is normal.
Unit cuts off without apparent reason.	➡	Check whether filters are blocked, dirty filters will cause the heater to overheat.
Power Failure.	➡	Switch OFF, then ON again when power is restored to re-set controls.
Remote control doesn't operate.	➡	Check battery. Try moving closer to heater.

ERROR MESSAGES

The Energysaver 556FTR has the ability to check its own operation continuously. If a fault occurs, an Error Message will flash on the Digital Display of the control panel. This assists with diagnosing the fault, and may enable you to overcome a problem without a service call. Please quote the code displayed when enquiring about service.

CODE DISPLAYED	FAULT	REMEDY
11	Ignition failure	Check gas is turned ON. Service call if repeated.
12	Flame failure	Check gas is turned ON. Service call if repeated.
14	Overheat	Clean filter Service call if repeated.
16	Room overheat	Lower room temperature to less than 40˚C.
31	Room Temperature Sensor faulty	Service call
32		
33	Overheat temperature Sensor faulty	Service call
34		
53	Sparker failure	Service call
61	Combustion fan failure	Service call
70	Faulty ON/OFF switch	Service call
71	Faulty solenoids	Service call
72	Faulty Flame Rod	Service call
73	Communication Error	Turn heater OFF, then ON again.
99	Flue Block	Check around flue terminal

In all cases, you may be able to clear the Error message simply by turning the heater OFF, then ON again. If the Error Message still remains or returns on the next operation, contact Rinnai UK and arrange for a service call.

INSTALLATION INSTRUCTIONS

IMPORTANT SAFETY INFORMATION

1. Gas Safety (Installation & Use). Regulations 1998 are the 'Rules in Force'.
   In your own interest and that of safety, it is law that all gas appliances shall be installed by competent persons in accordance with the above regulations.
   Failure to install appliances correctly could lead to prosecution. Other persons should NOT attempt to install this equipment.

2. This appliance is intended to be used to raise the temperature in a room or office etc. You should NOT use it for any other purpose without seeking advice from the supplier.

3. This appliance is safe if correctly installed and sited. Please comply CAREFULLY with the instructions.

4. Installation MUST be carried out in accordance with the current issue of:

   a) Building Regulations issued by the Dept. of the Environment and Building Standards (Scotland Consolidation) Regulations.
   b) I.E.E. Wiring Regulations for electrical installations.
   c) Gas Safety (Installation and Use) Regulations 1998.
   d) BS 5871 Part 1:1991
   e) BS 5440 Part 1:1990 and Part 2:1989
   f) BS 6891 Part 1:1989 (natural gas) and BS 5482 (propane)
   g) Local Bye Laws
   h) Children & Young Persons Act 1933 revised 1952
   i) Health and Safety at Work etc. Act, 1974
   j) Such other specifications or legislation that may have superseded the above documents.

5. Should the heater be fitted in a room where there are young children; elderly; infirm or handicapped persons, it is strongly recommended that a guard is fixed around the heater.

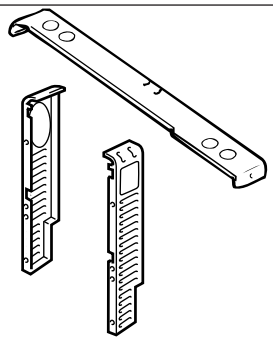
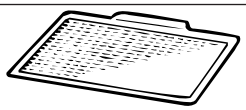
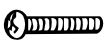
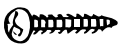
INSTALLATION INSTRUCTIONS

SPECIFICATION

Input 6.4Kw (21840 Btu/h) Burner: Stainless Bunsen Type

Ignition: Continuous Spark Gas Inlet: 1/2 inch BSP Connection
Flue: Forced Flue (Components are supplied with appliance).
Gas Control: Rinnai Electronic Modulating Controls.
Electrical Supply: 230V, 50Hz. This appliance is fitted with a supply lead and 3 pin plug.

■ Remove parts from carton and check that all parts shown below are included in the installation kit.

Back Spacer Set		1	Flue Locking Clamp		1
			Flue Lock Stopper		1
			Insulation Clip		1
Wall Bracket		1	Hose Clip		2
Angle Bracket		1			
Customers operating information and Installation Instructions		1	Plastic tie for air inlet		3
Air Filter		1	(M4×20)	 For Flue Lock Stopper	1
(M4)	For Back Spacer Set	4	(M4)	Flue Securing Screws	3
(M4)	For Air Intake Clip	5	(M4.8×32) Wood Screws	 Wall Bracket Screws	2

Check the unit supplied is correct for the gas type in your area.
Refer to local gas authority for confirmation of gas type if in doubt.
Refer to data plate located on the right hand side of the unit.
Check for damage, if the unit is damaged contact **Rinnai UK**.
Do not install a damaged unit before checking with your supplier.
Refer to an approved pipe sizing chart if in doubt about size of gas line.

LOCATION

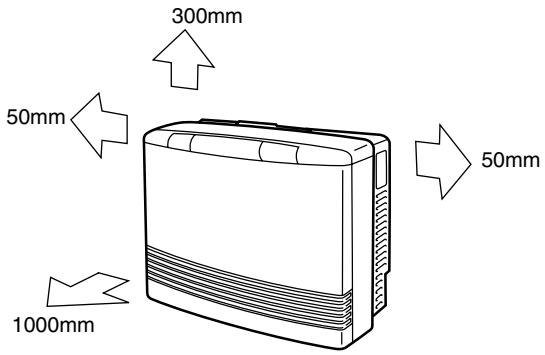
When positioning the heater the main points governing the location are:

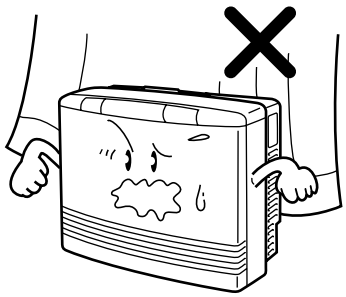
1. Flueing

2. Warm air distribution

This heater must not be installed where curtains or other combustible materials could come into contact with it.
In some cases curtains may need restraining.

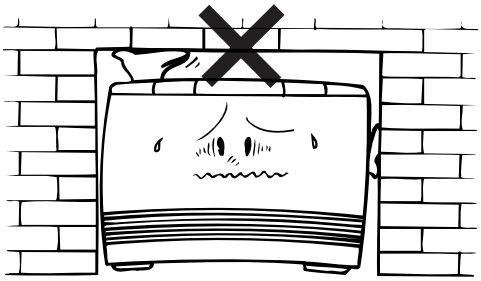
See diagram for other recommended clearances.



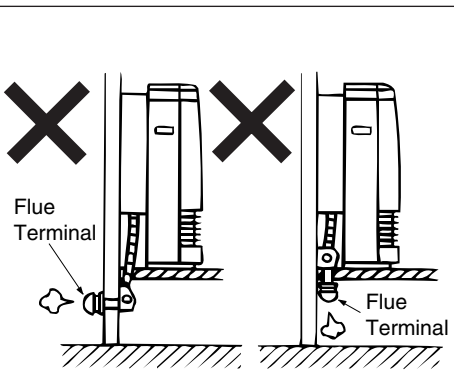


Flue fittings must be kept clear of flammable materials.

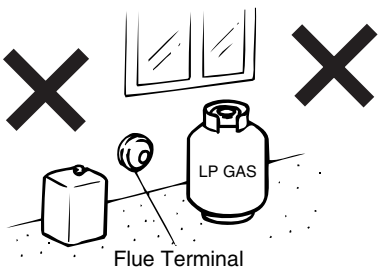
This heater is not designed to be built in.



The flue is not designed to be positioned under floors, or below the level of the heater.

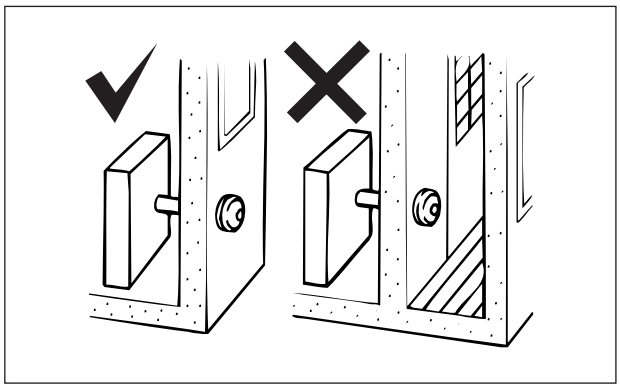


The flue terminal should be positioned away from flammable materials.



LOCATION

Do not flue into natural draught flues or fireplaces, this unit can only be used with one of the six types of Rinnai flue kits.
Do not flue unit into other rooms.
Flue terminal must be outside.



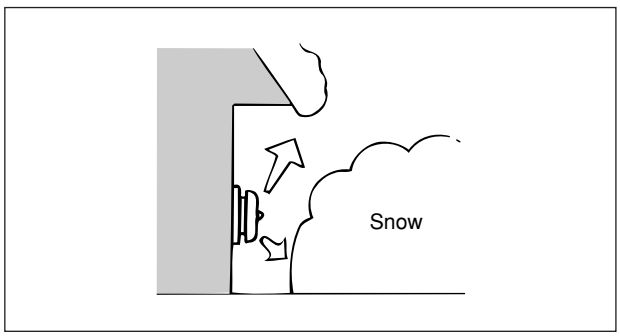
When fitting the terminal beneath any ventilation opening i.e. openable window, inlet to a ventilation system etc., check that no part of the terminal will finish within 300mm when measured vertically from the bottom of such openings. When the terminal will finish less than 2m above the level of any ground to which any person has access, a terminal guard of durable material must be fitted, and these are available from your supplier.

FLUE SIZES

6 Flue lengths are available.

S	flue suits wall	75	-	115 mm
A	flue suits wall	115	-	240 mm
B	flue suits wall	240	-	400 mm
C	flue suits wall	400	-	600 mm
D	flue suits wall	600	-	800 mm
E	flue suits wall	800	-	1000 mm

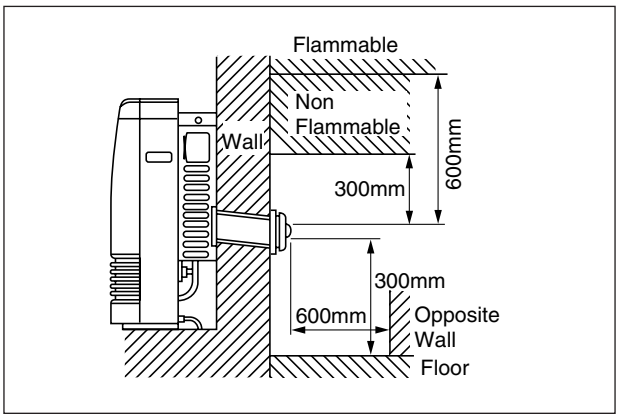
SNOW AREAS



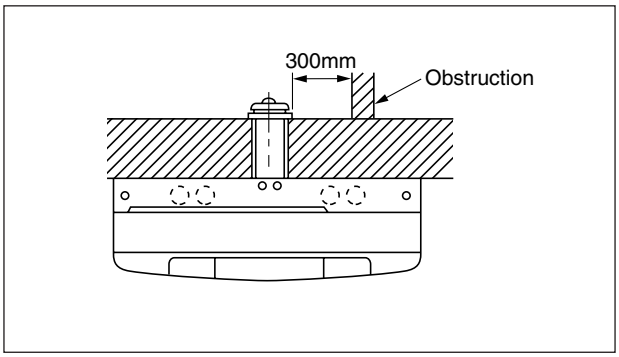
In areas subject to heavy snowfall, keep snow clear of flue terminal at all times.

STANDARD INSTALLATION OF FLUE MANIFOLD.

Diagram below shows minimum clearances and distances from obstructions. Also check local regulations.

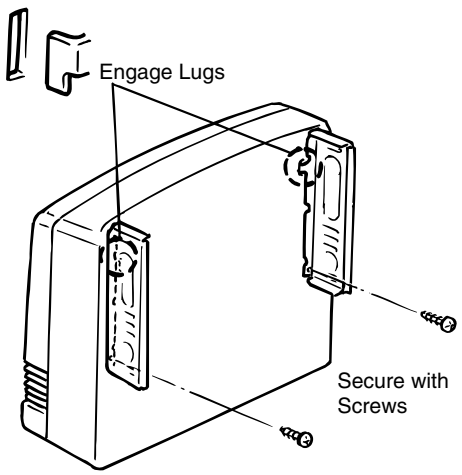


Side Clearances

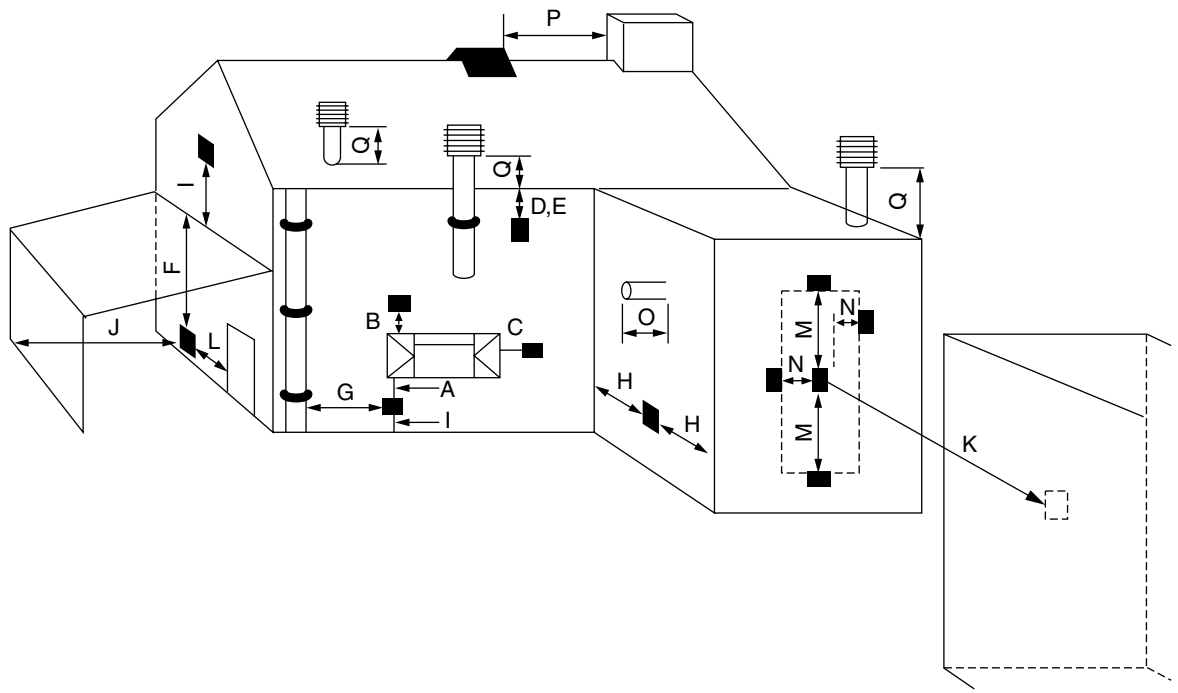


FIT BACK COVERS (SIDES ONLY)

Fit back covers (sides only) as shown below.



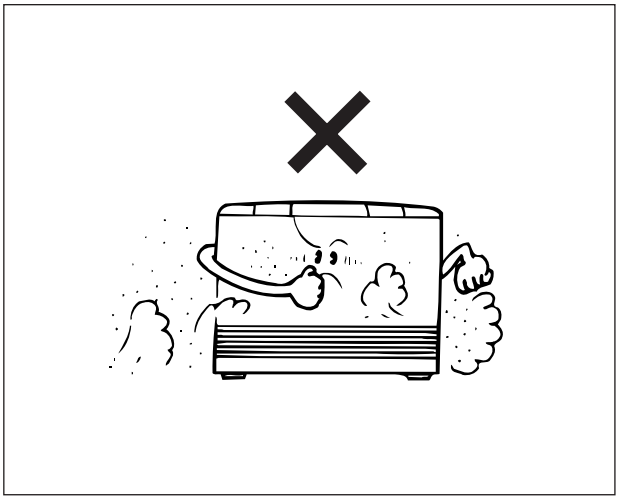
POSITIONING THE FLUE TERMINAL



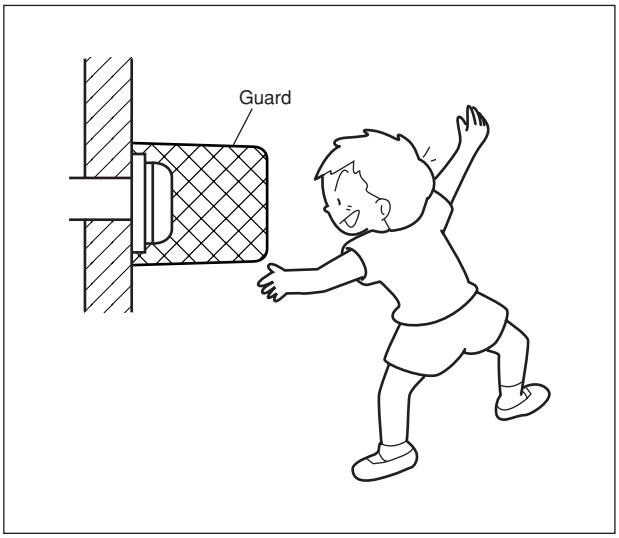
Dimension	Terminal Position	Distance
A	Directly below an opening, air brick, opening windows, etc.	300mm
B	Above an opening, air brick, opening window, etc.	300mm
C	Horizontally to an opening, air brick, opening window, etc.	300mm
D	Below gutters, soil pipes or drain pipes.	75mm
E	Below eaves.	200mm
F	Below balconies or car port roof.	200mm
G	From a vertical drain pipe or soil pipe.	150mm
H	From an internal or external corner.	200mm
I	Above ground, roof or balcony level.	300mm
J	From a surface facing the terminal.	600mm
K	From a terminal facing a terminal.	1200mm
L	From an opening in a car port. (e.g. door, window) into a dwelling.	1200mm
M	Vertically from a terminal on the same wall.	1500mm
N	Horizontally from a terminal on the same wall.	300mm
O	From the wall on which the terminal is mounted	N/A
P	From a vertical structure on the roof.	N/A
Q	Above an intersection with roof.	N/A

LOCATION

Do not install the heater in an unusually dusty area.



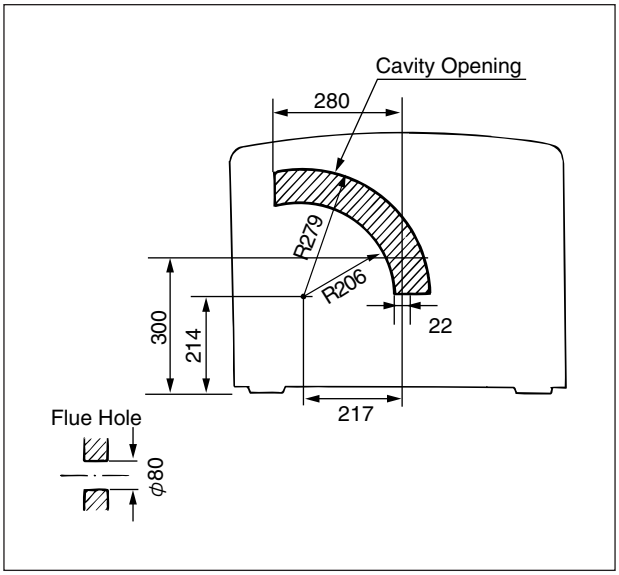
Use a flue guard if the terminal is easily accessible to children.
Check local regulations.
Guards are available as an optional extra.



Floor must be level, but see page 32 regarding adjustable legs.
Do not use electrical extension cords to connect unit to power supply.
Keep the power cord away from the flue.

FLUE MANIFOLD POSITION.

Centre of hole for flue manifold can be drilled anywhere within the shaded area. (To avoid studs etc.)



Before drilling the flue hole, check for water and gas pipes as well as electric cables.

Use an 80mm (8cm) drill for hole through wall.

MOUNTING TO WALL
Assemble Angle Brackets to Back Spacer Top with screws provided. Locate heater in position, hold Wall Bracket in position around Angle Bracket and mark hole positions, remove heater. Secure Wall Bracket to wall. Relocate heater in position ensuring Angle Bracket engages with Wall Bracket.

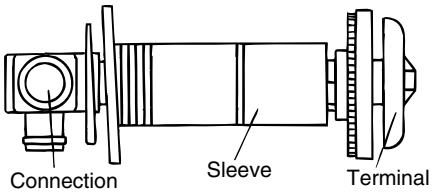
FLUE EXTENSION KITS
Flue extension Kits are available up to 4.5m with 3 elbows.

SLEEVE AND MANIFOLD INSTALLATION

METHOD FOR STANDARD WALLS

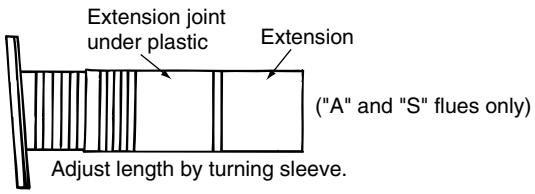
1. Dis-assemble Manifold from Sleeve.

   The flue consists of 3 parts, sleeve, inside connectors and tube, outside terminal; (dis-assemble by pulling hard on outside terminal and inner connections, then pull sleeve off outer terminal).



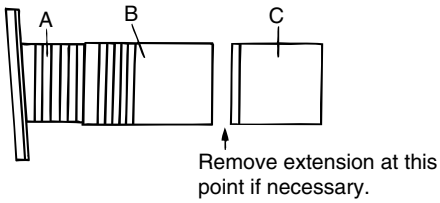
2. Adjustment of Sleeve Length.

   Measure wall thickness through previously drilled 80mm hole.
   End of sleeve should protrude 5-10mm from outside wall. Adjust sleeve length to wall thickness plus 5-10mm. (Sleeve is threaded for adjustment).



3. For A and S flues only

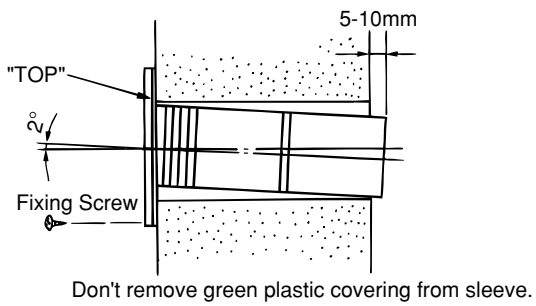
   Depending on flue set and wall thickness extension piece 'C' may need to be removed. Cut plastic, remove extension, then follow instruction 2.
   This applies to 'A' and 'S' flues only.
   There is no extention on other flues, they can be fully adjusted by turning the threaded section.



4. Fixing Sleeve.

   Fix to the wall, using the 3 screws provided.

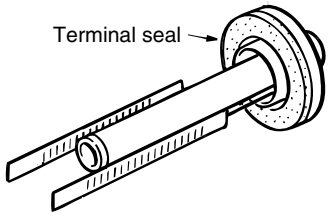
   NOTE:
   The flange is marked "TOP", sleeve must be fitted with this mark UP.
   Check sleeve protrudes 5-10mm on the outside.



SLEEVE AND MANIFOLD INSTALLATION

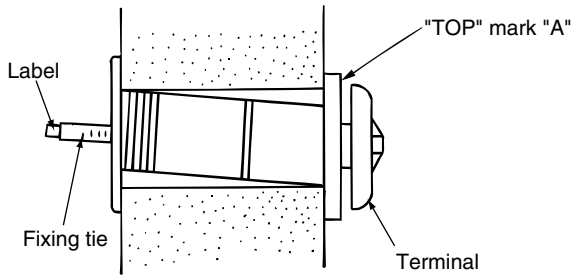
METHOD FOR STANDARD WALLS

5. Check rubber seal is in place on terminal.



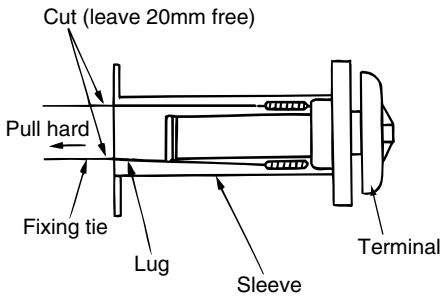
6. Installation of Terminal

   From outside, insert terminal into sleeve with the “A” mark at the top. Left hand side fixing tie is marked “LEFT” (from inside).

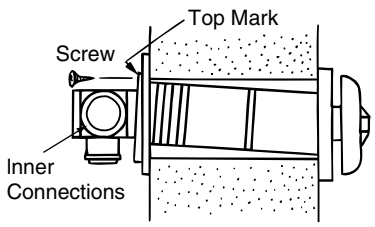


7. Attaching Ties

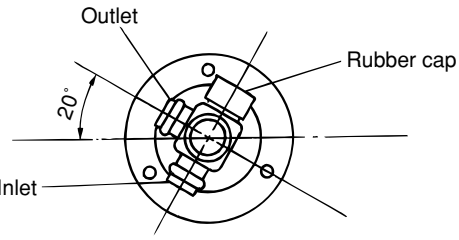
   Pull hard on left and right hand side ties, clip ties over lugs inside sleeve. You should be able to pull ties 2 or 3 slots past the starting point. Cut the ties, leaving about 20mm past the lugs. Bend ties so they are parallel with the wall.



8. Insert Inner Connection Assembly. Push assembly into the terminal tube, make sure “TOP” mark is uppermost. Fix with 3 screws provided.

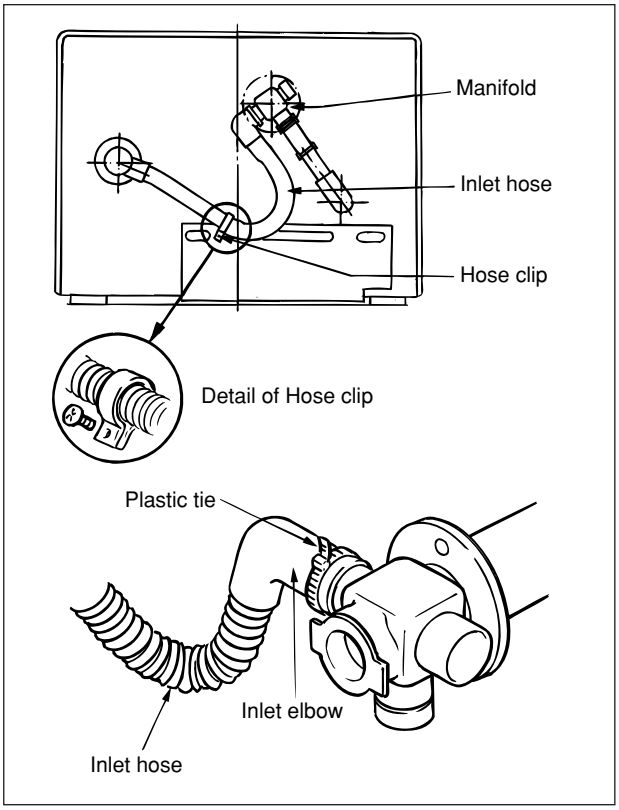


9. Manifold can still be turned after attaching.



FITTING UNIT

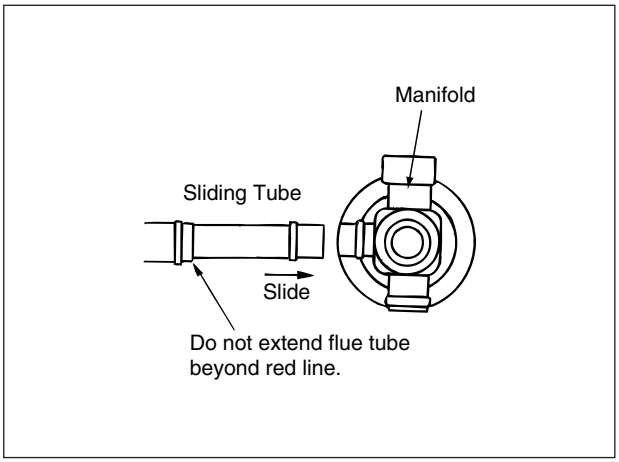
AIR INLET HOSE



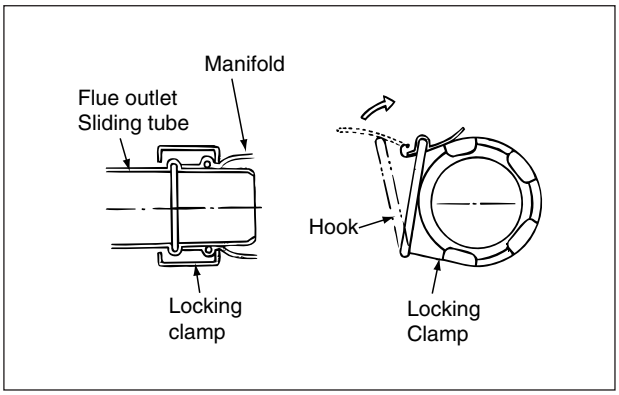
LOCKING CLAMP, SCREW CLAMP AND INSULATION.

The following components can be fitted by reaching down the rear of the appliance as it is positioned against the wall.

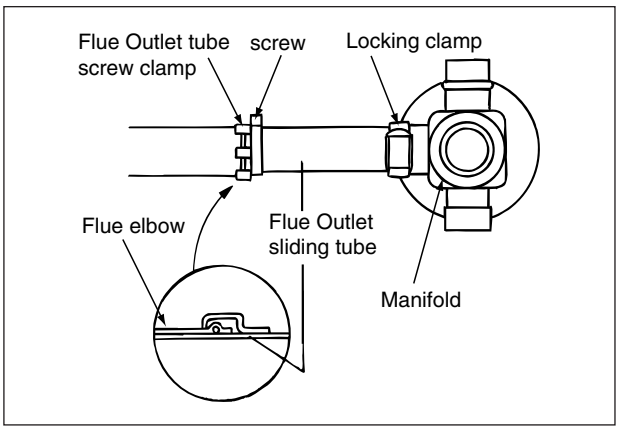
1. Connect the flue outlet to the manifold by extending the stainless steel sliding tube until it is fully inserted into the manifold.



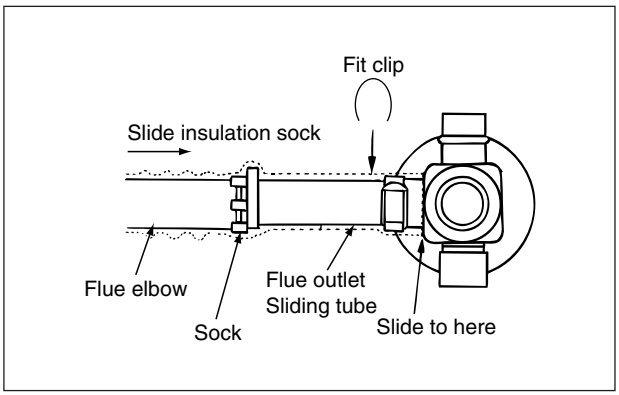
2. Fit the locking clamp over connection between sliding tube and manifold. Engage the hook and rotate it until it snaps against the body of the clamp.



3. Fit the screw clamp between the sliding tube and the flue elbow. Secure with the 4mm screw supplied. The flue outlet is now locked into position.



4. Slide the insulation sleeve up to the flue manifold, slip the securing clip over the sleeve as shown.



CONNECTING GAS AND ELECTRICAL SERVICES

1. **GAS CONNECTION.**

   Purge any air or swarf from the gas line. Connect up the appliance to the gas supply using a union service cock to facilitate servicing.
   Inlet connection size Gas (1/2 inch male BSP)
   Check gas soundness using leak detection fluid, not naked flame. Connection can be easily reached from right hand side rear of appliance. Remove bottom trim (pulls off). Remove louvres (6 screws) and front panel.

2. **ELECTRICAL CONNECTION.**

   WARNING: This appliance must be earthed.
   This appliance is suitable for 230V-50Hz mains only and external wiring must be carried to out I.E.E. regulations.
   Connect appliance to electrical supply using moulded plug supplied. A means of completely isolating the heater from the supply with contact separation of at least 3mm on all poles must be provided for servicing. The fuse should be 3amp.
   Observe polarity and ensure that wiring is correctly restrained.

E Earth	⏚ Green / Yellow
L Live	Brown / Red
N Neutral	Blue or Black

   IMPORTANT
   Do NOT use a clock or any type of switch on the electrical supply apart from the means of isolating the supply for servicing. (A clock or switch would also turn OFF the convection fan causing overheating).

3. On the rear right hand side of the heater (seen from the front) there is a terminal block with 3 numbered terminals. As delivered there is a link between terminals 2 and 3 and should be left like that where the dimension between the heater and the flue does not exceed 1.8 metres. For dimensions of more than 1.8 metres, change the link to connect between terminals 1 and 2.

4. This heater has a built-in timer but may also be connected so as to have over-riding control from a central clock.

   1. For time control using built-in clock only, set up clock as described on page 13 of these Instructions.
   2. For use in Offices or Schools etc. where all heaters are connected to a central control system which shuts down all services at the end of the working day but where individual heaters can still be set up to separate users needs, refer to **Rinnai UK** for appropriate Conversion Kit.

TESTING

PRESSURE CHECKING PROCEDURE
Caution – 230V inside appliance

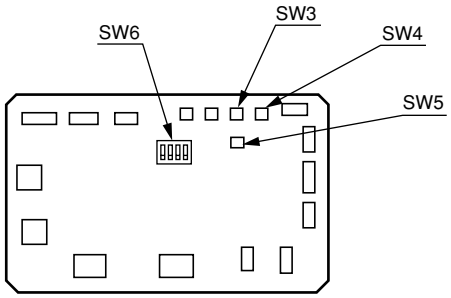
1. Check that SW6 (Dip switches) are correct for the gas type for which the appliance is to be used. (Refer to diagram opposite).
2. There are two test points, one on the heat exchanger, one on the gas manifold. Connect a pressure gauge between both test points. (Connect one side of the gauge to one point, the other side of the gauge to the other). If you are using an electronic manometer, connect the ⊖ side to the heat exchanger test point.
3. Press the ON/OFF button to operate the appliance.
4. With the appliance operating, press SW5 once.
5. Press SW4 to operate the appliance on forced low.
6. Check the pressure against the low pressure shown in the chart below.
7. Press SW4 again.
8. Press SW3 to operate the appliance on forced high.
9. Check the pressure against the high pressure shown in the chart below.
10. Press SW3 again.
11. Press SW5 again to return the heater to normal operation.
12. Turn the heater OFF, remove the pressure gauge, and replace the test point screws.
13. Reassemble appliance, set the internal and/or remote clock if fitted, and check appliance operaton.

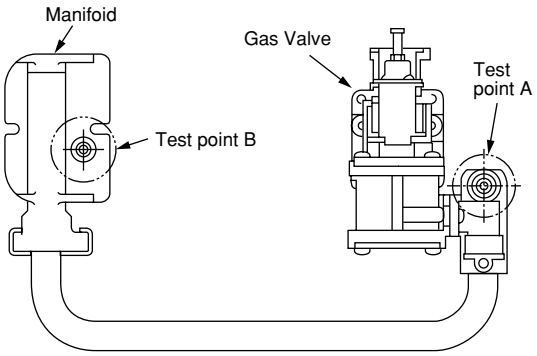
THE REGULATOR HAS BEEN FACTORY PRE-SET. IF THE PRESSURE IS INCORRECT, CHECK THE SUPPLY PRESSURE FIRST, BEFORE MAKING ANY ADJUSTMENT TO THE APPLIANCE.

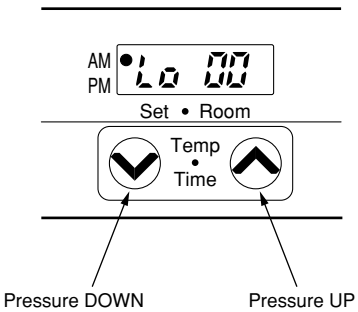
IF THE PRESSURE NEEDS RE-SETTING FOLLOW THE INSTRUCTIONS BELOW:

1. Follow checking procedure 1-6, reset the low pressure by using the "^" or "v" buttons on the control panel.
2. Press SW4 again to lock in the selected setting.
3. Follow checking procedure 8 and 9, reset the high pressure by using the "^" or "v" buttons on the control panel.
4. Press SW3 again to lock in the selected setting.
5. Press SW5 to return the heater to normal operation.
6. Turn the heater OFF, remove the pressue gauge, and replace the test point screws.
7. Reassemble appliance, set the internal and/or remote clock if fitted, and check appliance operation.

		SW6 DIP SWITCH
556FTR	NG	OFF ON OFF OFF 1 2 3 4
	LPG	ON OFF OFF OFF 1 2 3 4



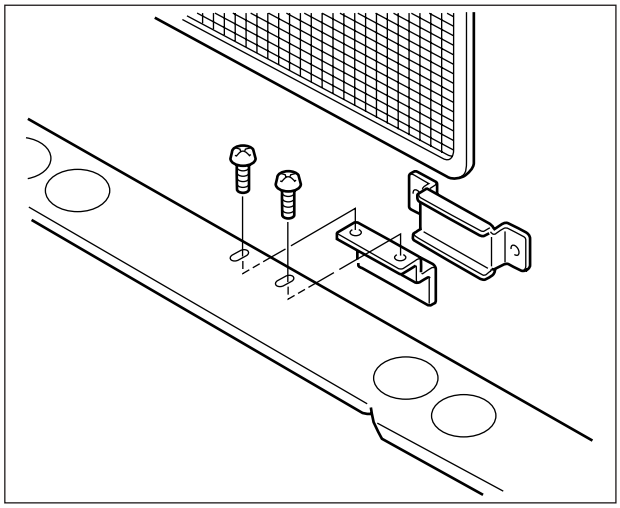




		NG	LPG
BURNER PRESSURE SETTINGS	HIGH	9.2mbar	10.6mbar
	LOW	1.8mbar	2.0mbar

FITTING TOP SPACER + WALL CLIP

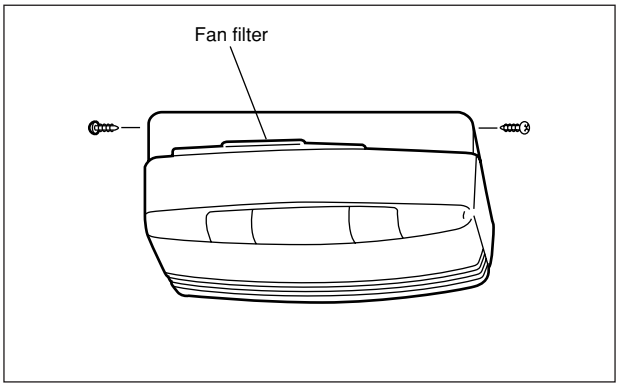
■ SECURE HEATER TO WALL

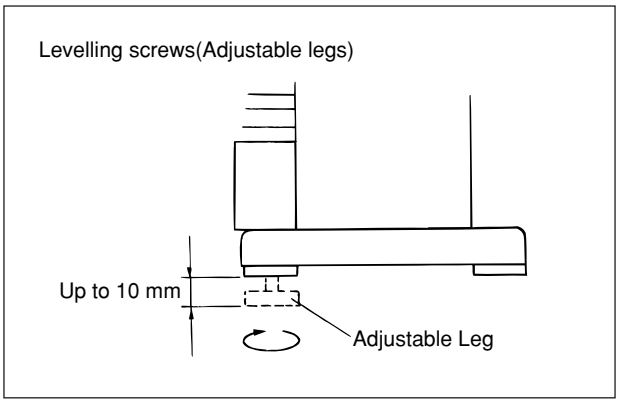


Fix angle bracket to back spacer with screws provided.

Fix wall bracket to wall, so that the tongue of the anglebracket will fit into it, when the back spacer is fitted to the top of the heater.

Tighten all screws, fit fan filter.





If necessary, the unit can be levelled using the adjustable legs under the front right and left hand side legs.

■ INSTRUCT CUSTOMER ON USE OF HEATER

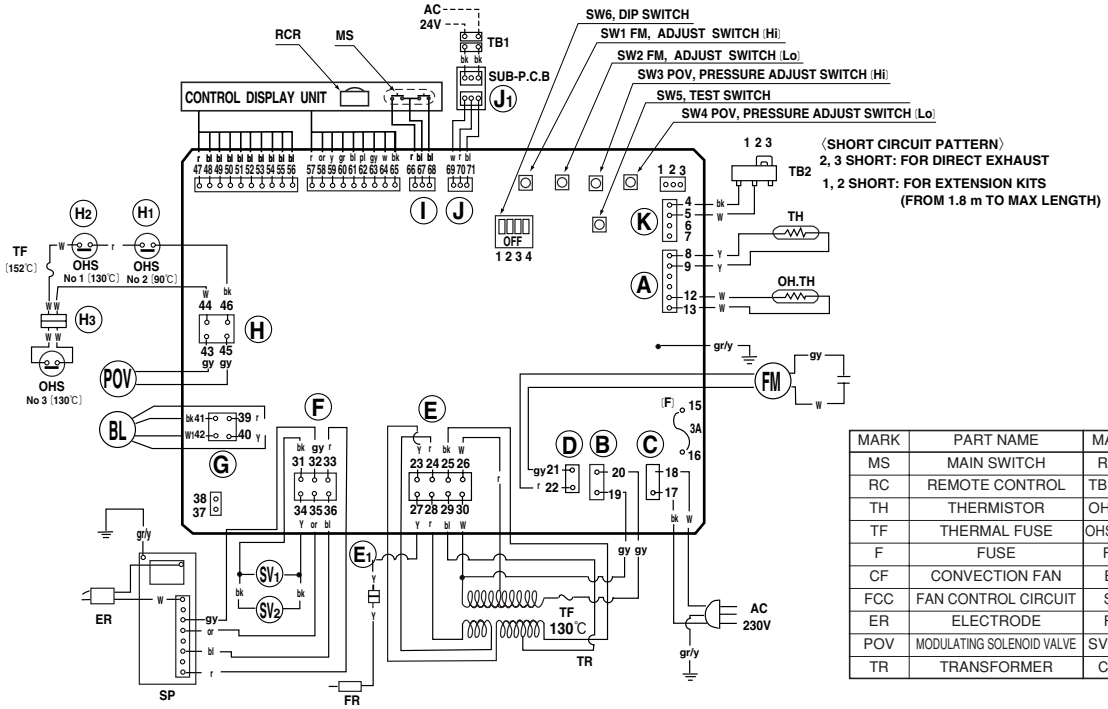
When you are satisfied that the appliance is operating correctly, explain operation of heater to the customer.

FAULT-FAILURE PROCEDURE

If unable to get the heater to operate correctly contact **Rinnai UK**.

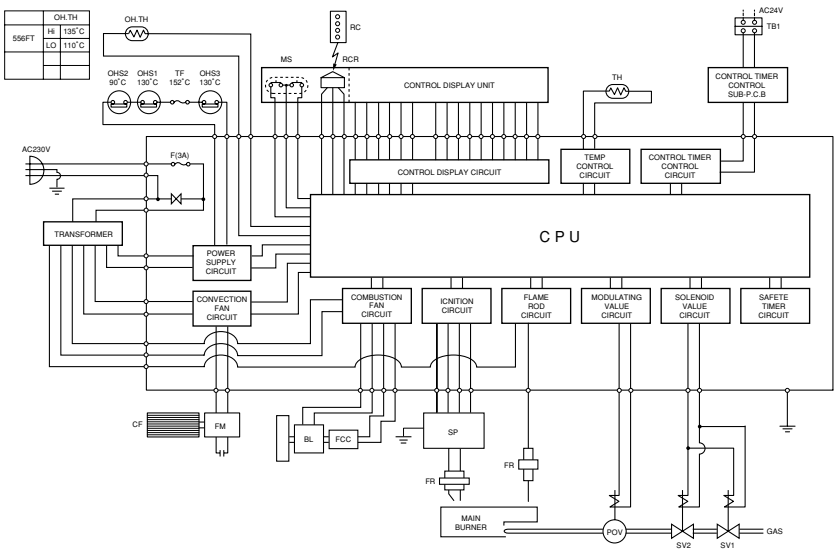
BLOCK AND WIRING DIAGRAM

WIRING DIAGRAM



MARK	PART NAME	MARK	PART NAME
MS	MAIN SWITCH	RCR	REMOTE CONTROL RECEIVER
RC	REMOTE CONTROL	TB1～2	TERMINAL BLOCK
TH	THERMISTOR	OH, TH	OVER HEAT THERMISTOR
TF	THERMAL FUSE	OHS1～3	OVER HEAT SWITCH 1～3
F	FUSE	FM	FAN MOTOR
CF	CONVECTION FAN	BL	COMBUSTION FAN MOTOR
FCC	FAN CONTROL CIRCUIT	SP	SPARKER
ER	ELECTRODE	FR	FLAME ROD
POV	MODULATING SOLENOID VALVE	SV1～2	MAIN SOLENOID VALVE 1～2
TR	TRANSFORMER	CPU	CENTRAL PROCESSING UNIT

BLOCK DIAGRAM



CODE	COLOUR
pl	purple
y	yellow
w	white
gr/y	green/yellow
gy	grey
bl	blue
r	red
bk	black
or	orange
br	brown
gr	green

FORCED FLUE HEATER EXTENSION KITS

EXTENSION KIT PARTS AND INSTALLATION GUIDE

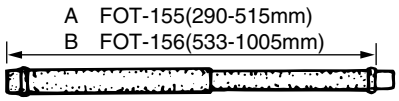
FOT - 155	0.5m EXTENSION KIT
FOT - 156	1.0m EXTENSION KIT
FOT - 157	2.0m EXTENSION KIT
FOT - 158	BENT ELBOW KIT
FOT - 160	LONG FLEX TUBE 600 KIT

Rinnai

• This extension set is to be used for installations requiring extra distance.

MAXIMUM FLUE LENGTH 4.5m WITH 3 ELBOWS

■ NAMES AND NUMBERS OF PARTS



①EXHAUST PIPE

④BENT ELBOW

⑦PIPE STOPPER B

⑩NUT

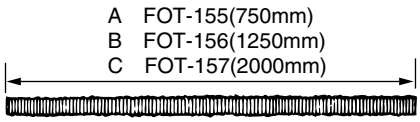
②EXHAUST PIPE (STRAIGHT) 1 Metre

⑤HOSE JOINT

⑧PIPE CLAMP

⑪SCREW A

⑫SCREW B



③AIR INTAKE HOSE

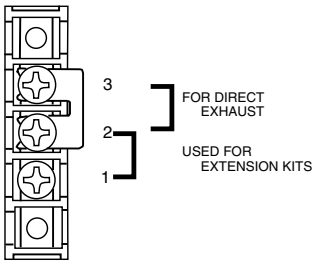
⑥PIPE STOPPER A

⑨WALL-FIXTURE

⑬LONG FLEX TUBE

			PARTS No.	FOT-155	FOT-156	FOT-157	FOT-158	FOT-160
①	A	EXHAUST PIPE	FOT 081-2	1				
	B	EXHAUST PIPE	FOT 082-2		1	1		
②		EXHAUST PIPE (STRAIGHT)	FOT 157-3			1		
③	A	AIR INTAKE HOSE	RHF 300-51-6	1				
	B	AIR INTAKE HOSE	RHF 300-51-7		1			
	C	AIR INTAKE HOSE	RHF 300-51-3			1		
④		BENT ELBOW	FOT 087-002				1	
⑤		HOSE JOINT	FOT 062-12	1	1	1		
⑥		PIPE STOPPER A	305F-0017	1	1	2	1	1
⑦		PIPE STOPPER B	FOT 081-4	1	1	1		
⑧		PIPE CLAMP	FOT 062-8	2 SET	3 SET	4 SET		
⑨		WALL FIXTURE	FOT 062-9	2	3	4		
⑩		NUT	FOT 062-10	2	3	4		
⑪		SCREW A	ZAA0422SC	2	3	4		
⑫		SCREW B	ZEAA0412SZ	4	6	8		
⑬		LONG FLEX TUBE	FOT 160-2					1

※ When the appliance is installed using a flue extension that exceeds 1.8 metres you must change the link on the flue extension terminal block as shown.
Terminal is located at the rear of unit next to gas inlet.



■ TYPES COMPATIBLE WITH EXTENSION KIT

RHFE-556FTR/556T
INSTALLING AN EXTENSION KIT

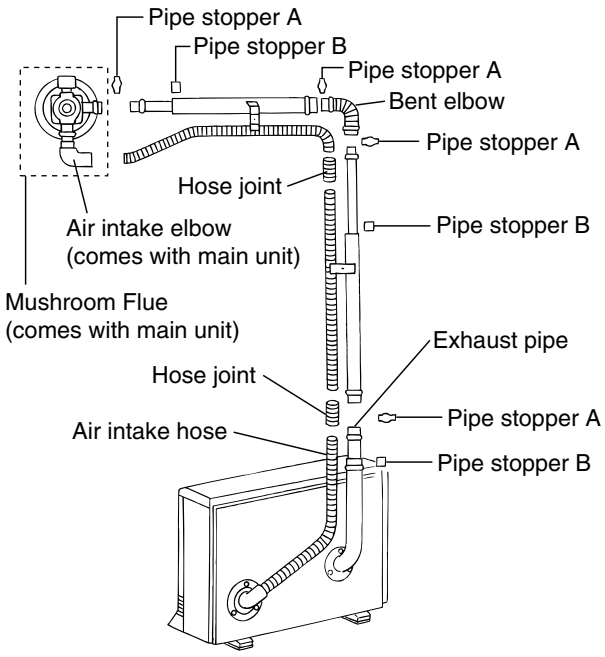
Installing an extension kit requires construction of an air line and the exhaust line. The air line is connected between the Air Supply Elbow at the rear of the heater and the air inlet port on the Flue pipe. Similarly, the exhaust line is connected between the joint pipe at the rear of the heater, and the exhaust port on the Flue pipe.

Caution: Check to see there is no debris in pipe or hose.

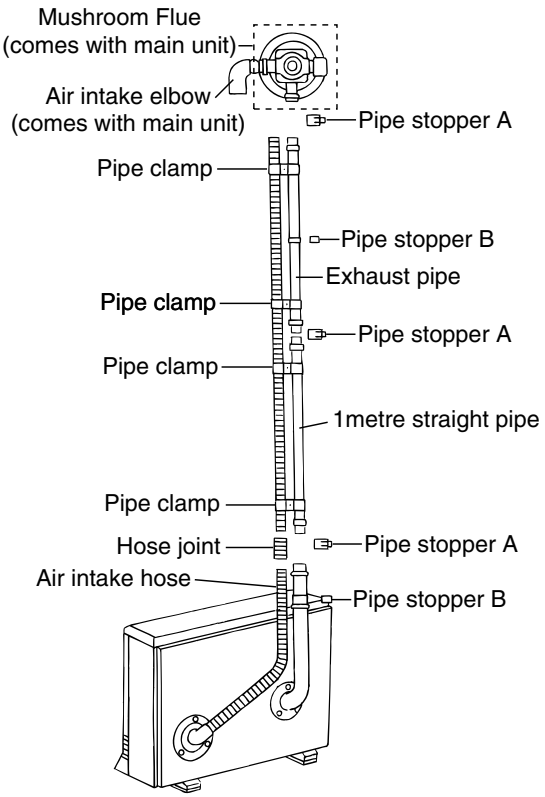
■ HOW TO INSTALL

MODEL: RHFE-556FTR/556T

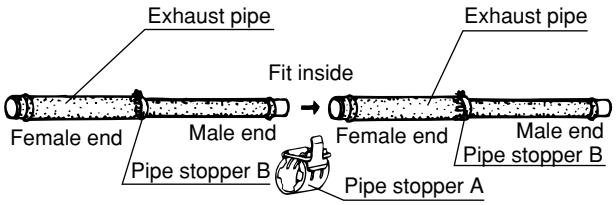
Example: Using 2 sets of extension kit and 1 bend set.



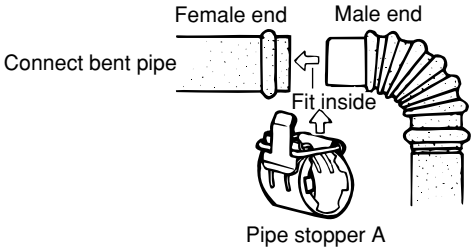
Example: Using 2 Metre side pipe kit.



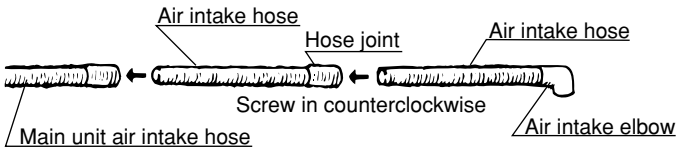
1. How to connect exhaust pipes



To connect the exhaust pipes, fit the male end into the female end and clamp with pipe stopper A to prevent slipping. The exhaust pipe can be telescoped to the required length; do not cut it.



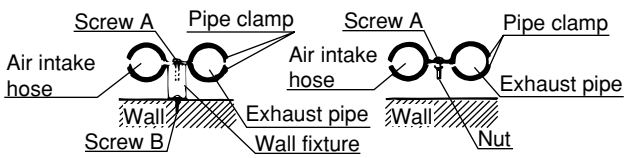
2. How to connect air intake hose



Screw hose joint half of its length onto the air intake hose, then screw another air intake hose into the joint. The hose can be cut to the required length.

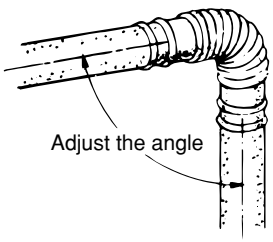
IMPORTANT: The PVC air line is longer than the exhaust line and may need to be cut to size. Be sure, however, to thoroughly deburr all rough edges.

3. Affixing the air intake hose and exhaust pipe



- Set the air intake hose and exhaust pipe into the pipe clamps, screw the clamp onto the wall fixture, and affix to the wall with screw B.
- The air intake hose and exhaust pipe can also be screwed onto the wall using the pipe clamp and the nut.

4. How to use the bent pipe



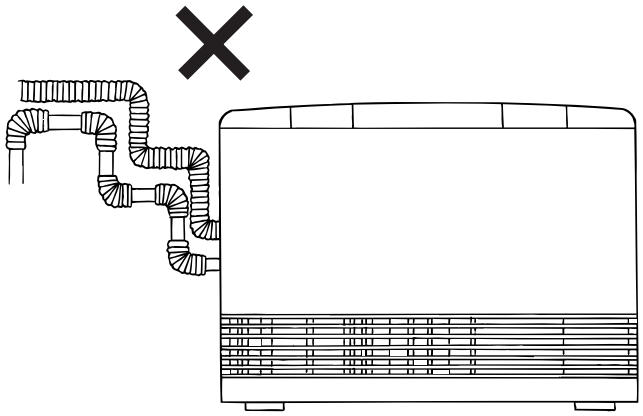
With the exhaust pipes inserted into the ends, bend the bent pipe to the angle required for installation.

This part is mainly used for curves and for connection to vent terminal.

■ CAUTIONS

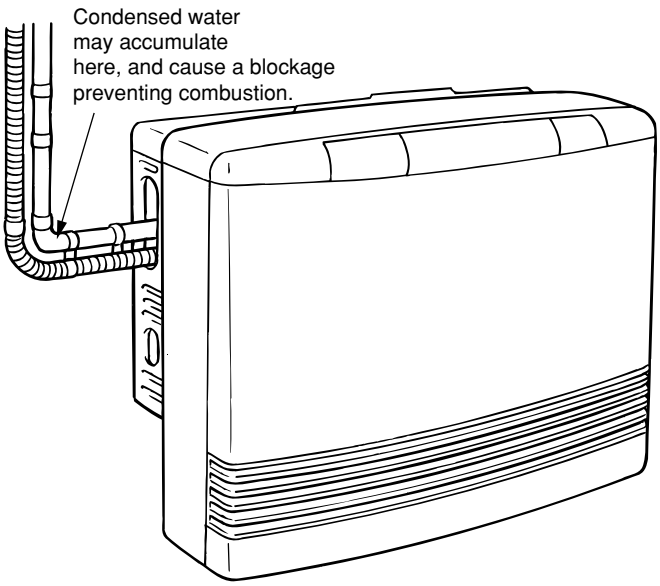
1. Maximum extendable length

FOR BEST ROOM AIR HUMIDITY, KEEP WATER IN THE HUMIDIFIER TRAY.



- 4.5 Metres, 3 Bends
- The bend where the hose and pipes leave the body is not counted.
- The air intake hose should run along the exhaust pipe.

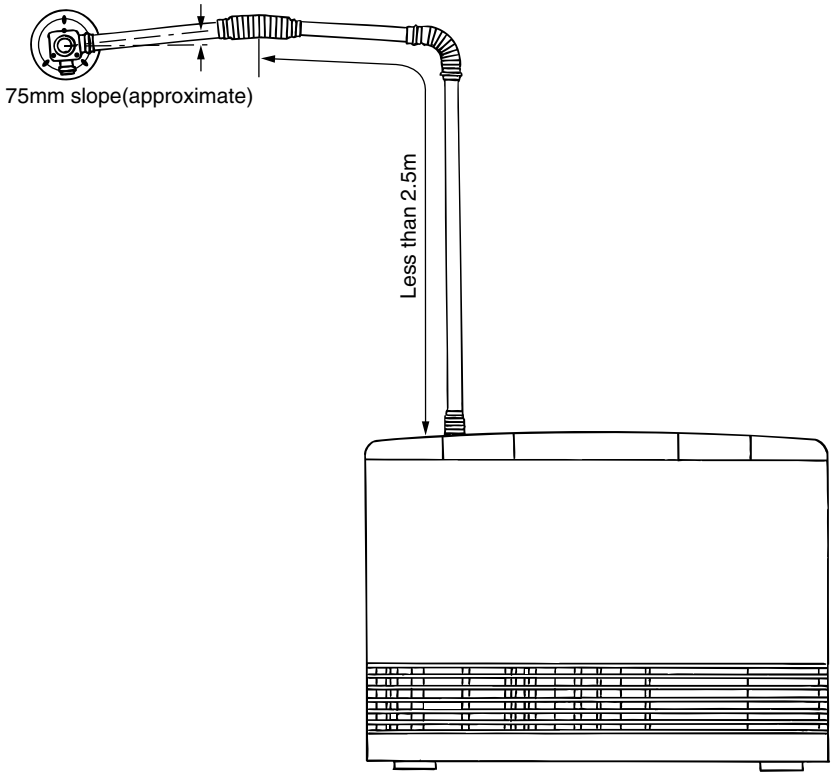
2. To prevent water condensation



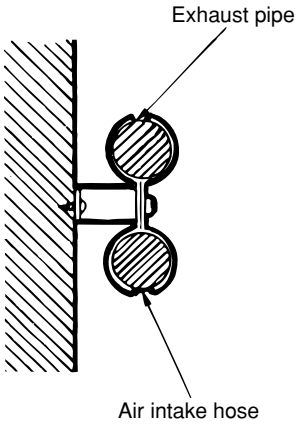
CAUTION

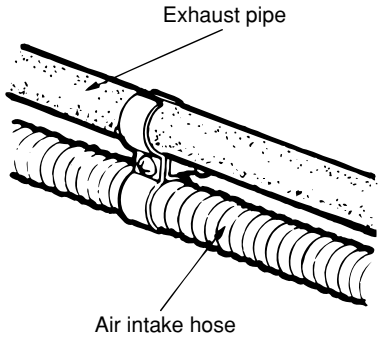
Never allow the exhaust pipe to sag, as condensed water may accumulate and cause incomplete combustion.

3. Condensed water formed by combustion, will run back to the unit, and may overflow from the condensation pan if pipes are longer than 2.5m. Therefore, pipes exeeding these lengths should be made to drain to the outside by giving their horizontal portions 75mm or more downward and outward slope.

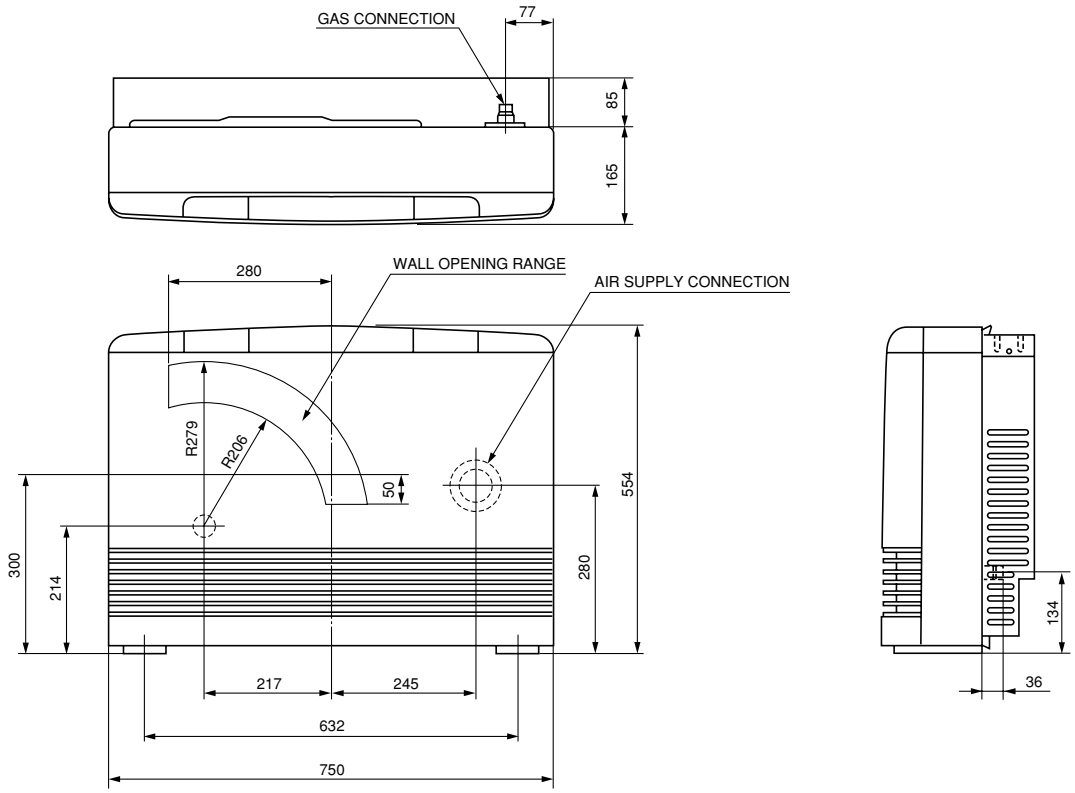


4. Wherever the air intake hose and exhaust pipe run sideways, try to have the exhaust pipe on top (to prevent the air intake hose from sagging onto the exhaust pipe).





DIMENSIONS



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